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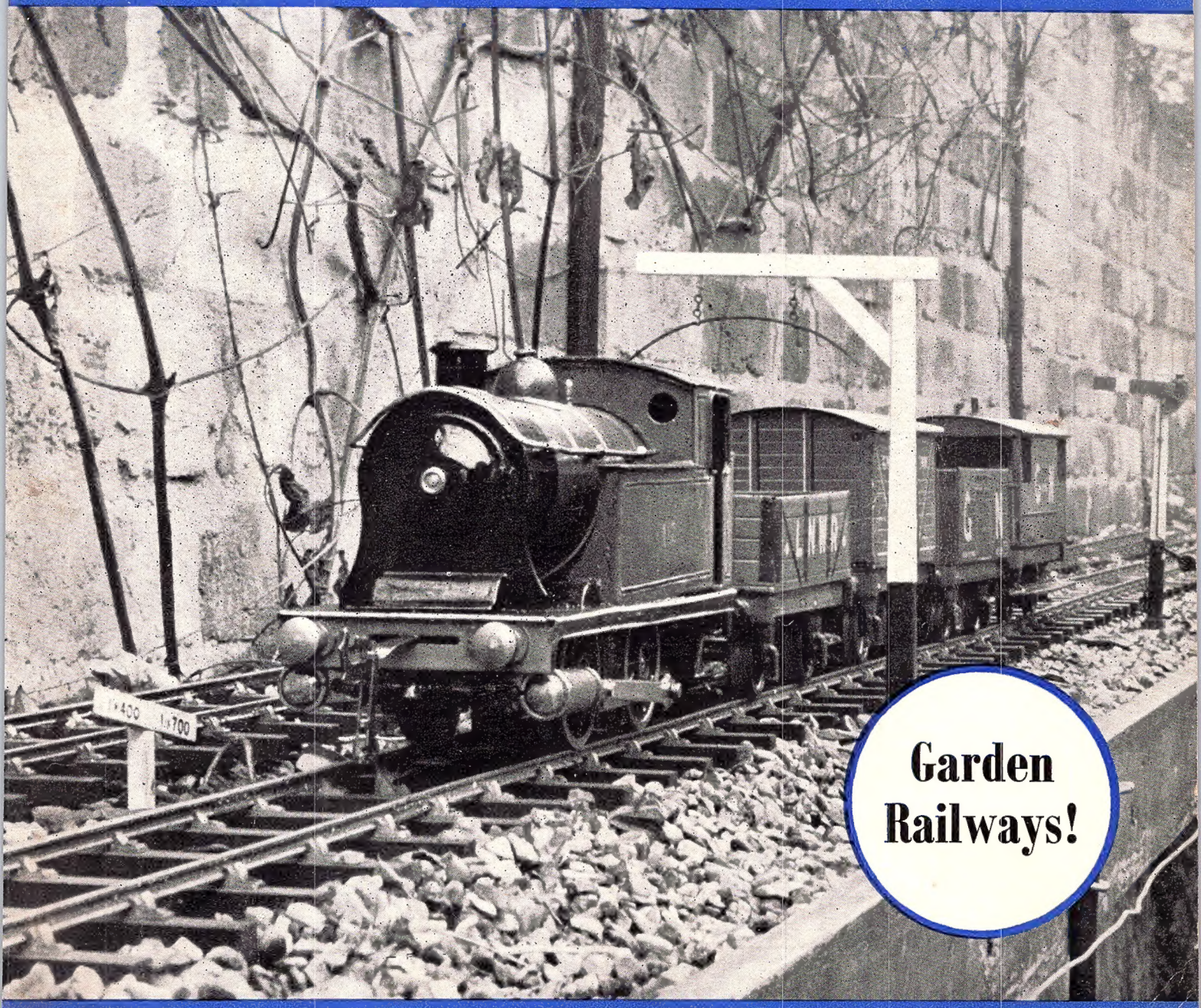

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VOL 8 1957 2/- JULY

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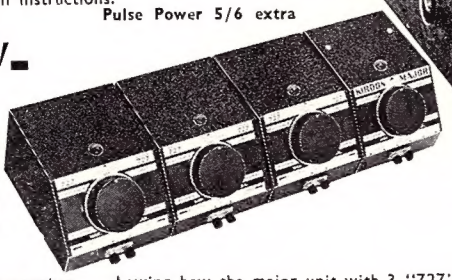

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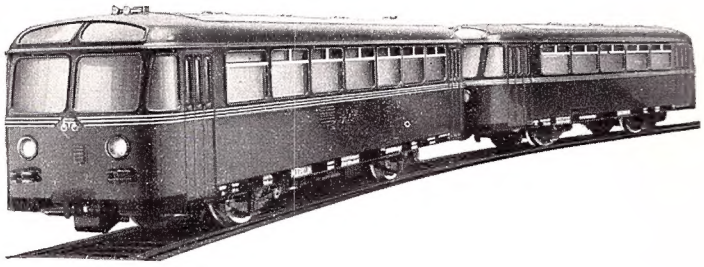

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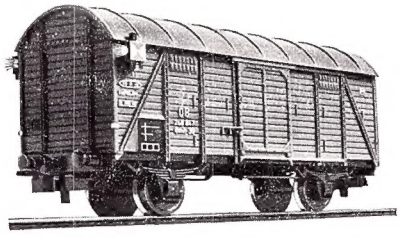

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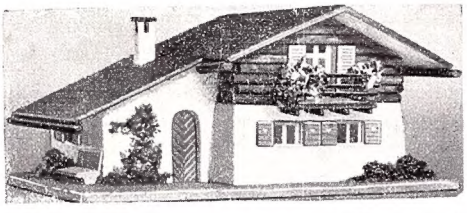

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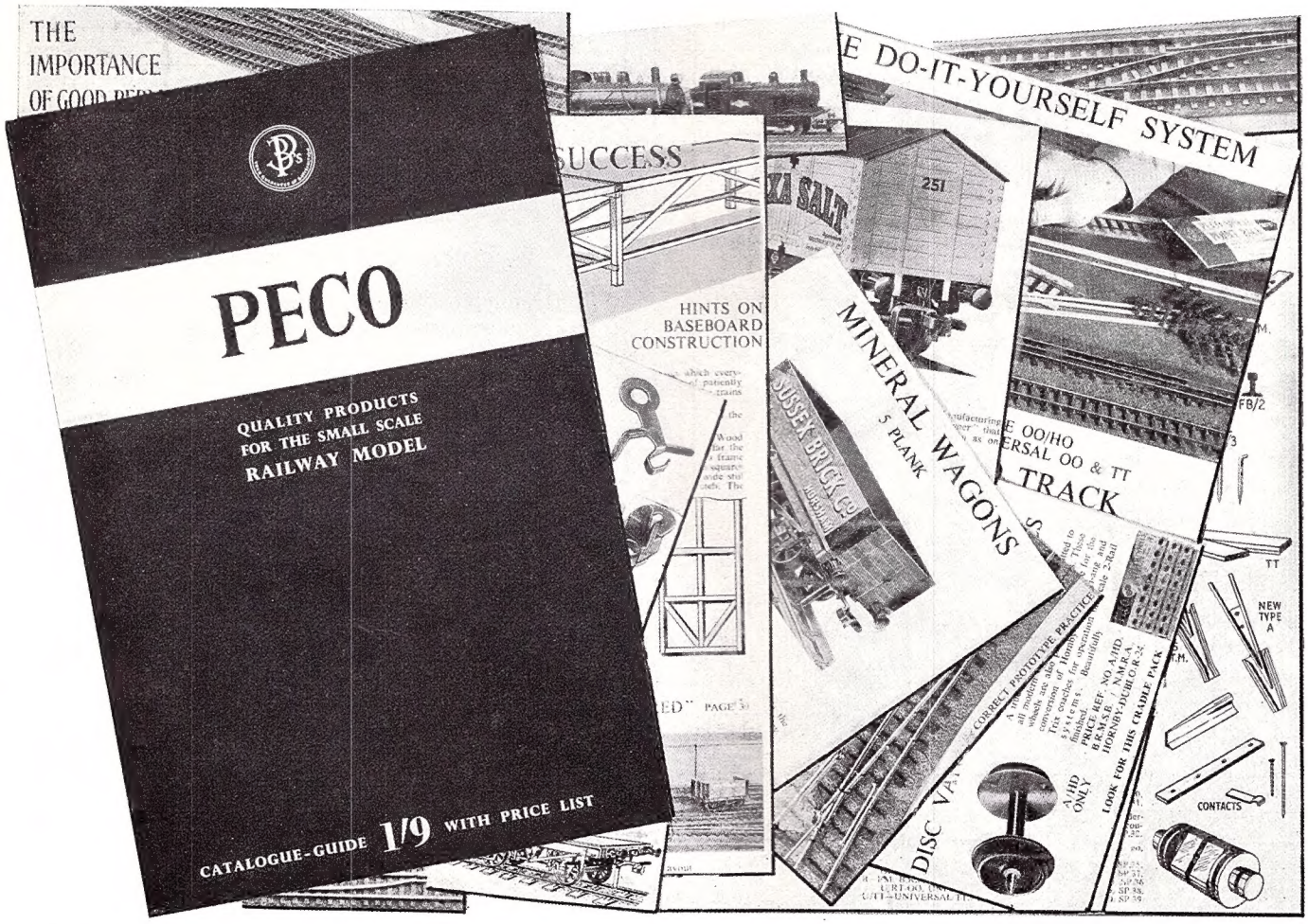

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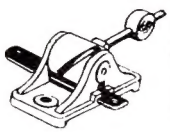

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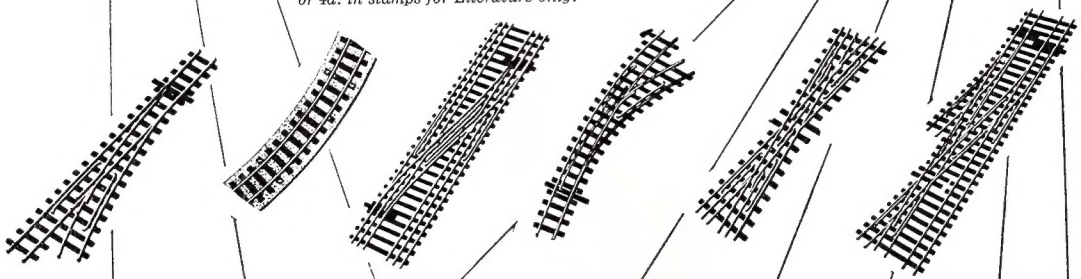

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The Lobby

WE note that our good friend the Rev. Peter Denny, whose article on outdoor buildings forms the Do-It-Yourself feature of this special garden railway number, has appeared recently in the national press, not for his modelling activities but this time because he superintended the pruning of a fig tree, popularly supposed to be protected by a curse. However, we understand that the tree in question was supposedly planted in the sixth century, which would make it the oldest fig tree in existence by a comfortable margin of several hundred years! So we can breathe again.

Another old friend of ours, Les Young, has also appeared in the press, the *Stockport Express,* the occasion being his trip to Canada last month. This was to attend a conference in Jasper in connection with his work as an insurance consultant, though, knowing Les, we were not at all surprised to see that he was also on the lookout for ideas from across the Atlantic to enliven further this year's Manchester Model Railway Exhibition. Indeed, the only times we have met him when he has not been actively looking for ideas have been when he has been too busily involved in the exhibition itself! Les is so tireless a worker on behalf of the Manchester M.R.S. that it goes to prove that it is the busy man who can always find the time for extra activities.

Still on club matters, we should like to extend our heartiest congratulations to Norman Eagles, whose Sherwood Section is well known to all readers, on his election to the post of deputy chairman of the Model Railway Club. Although best remembered in his capacity as a "well-known writer," Norman has for many years been a committee member of the club and a stalwart worker at exhibition times. He succeeds F. A. ("Fanny") Nutter, who we are sorry to say has had to resign from this responsible position due to an impending removal. "Fanny" has long been a tower of strength. His genial, unruffled good humour has never failed to maintain at least one oasis of sanity in those mad moments during the erection and breakdown of both the London and Manchester shows. Our regrets on his departure are tempered by the thought that in Norman Eagles the M.R.C. has found someone worthy of the fine tradition that has been established.

We are happy to announce that an arrangement has been reached with our popular French contemporary, *Loco Revue,* whereby we can supply copies of this fine magazine by direct subscription, avoiding any difficult formalities. Full details are to be found on page xiv.

Loco Revue, which, as we mentioned earlier this year, has also increased its format to our large size, is well illustrated by photo and line drawings, while, as an aid to those whose French is none too reliable, titles and captions have English translations. Indeed, quite apart from its general interest and value to enthusiasts following continental practice, *Loco Revue* can serve either

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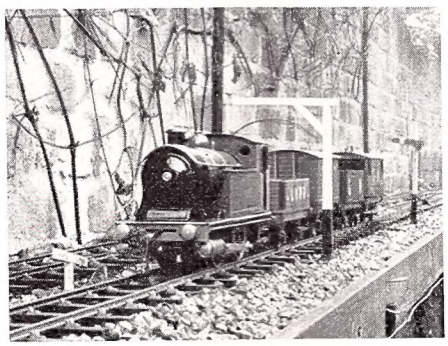

COVER PICTURE

Free-lance 0-4-0 tank shunting on Mr. Palin-Evans's 10mm. scale garden railway (photo by E. C. Griffiths).

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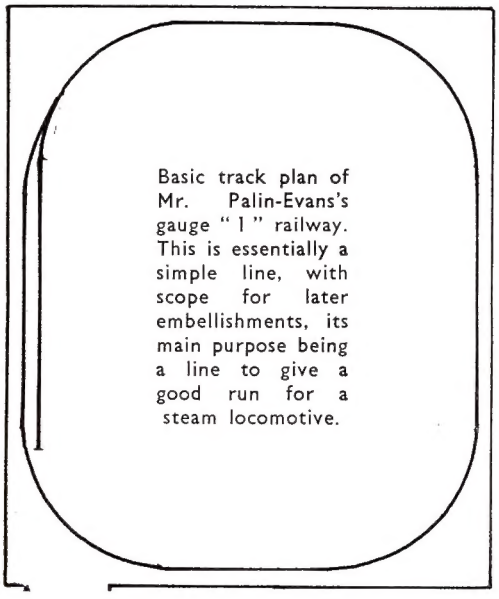
Railway of the Month

A COLLECTOR'S GARDEN RAILWAY

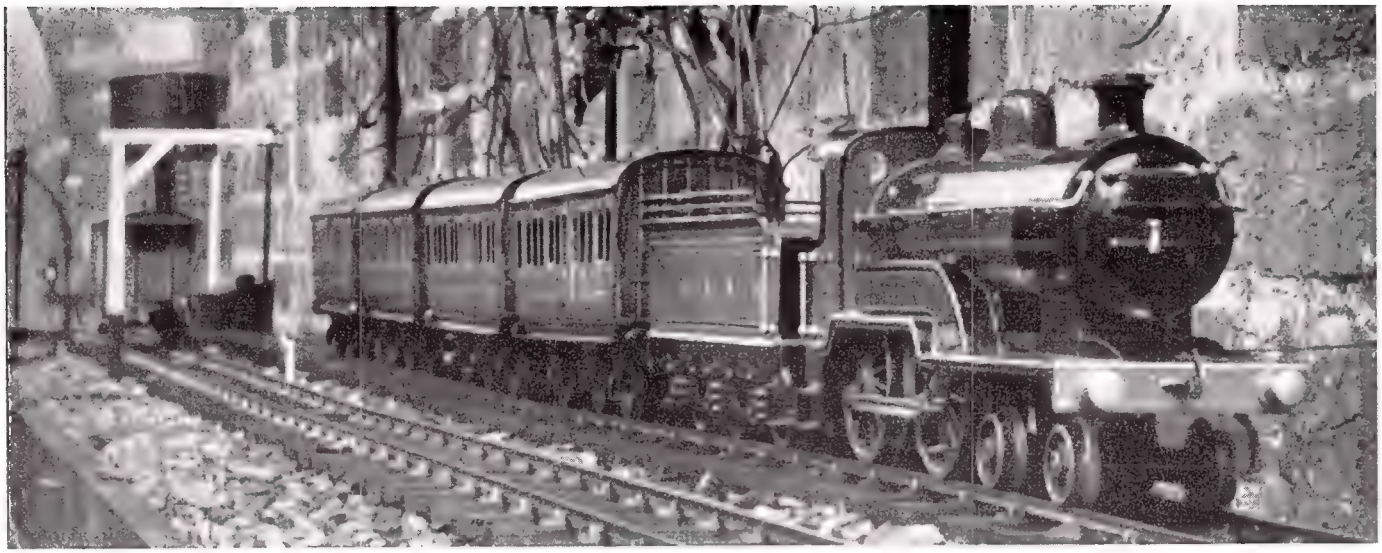


Basic track plan of Mr. Palin-Evans's gauge "1" railway. This is essentially a simple line, with scope for later embellishments, its main purpose being a line to give a good run for a steam locomotive.

Photos and notes by E. C. Griffiths

OUR railway of the month is an outdoor layout operated by Mr. J. T. Palin-Evans, which is ideally situated in a walled courtyard at the rear of his thirteenth-century house lying almost in the shadow of Farnham Castle. Here in the pleasantly sheltered old-world surroundings is operated this gauge "1" layout powered by low-pressure steam and clockwork locomotives. Arranged for convenience on shelves fixed to the walls at a height of about 3ft. 6in., which eliminates all stooping, this was originally a gauge "O" layout, but a change over to gauge "1" was made just over a year ago on account of the extra power obtainable from low-pressure steam locomotives in this gauge, using the same site as formerly. Basically a simple oval 28ft. x 15ft., it gives the "steamers" a chance to show their paces, yet is small enough for clockwork operation when the chance visitor arrives.

The rolling stock is predominantly pre-grouping, including many of the old private owner wagons such as True-Form Boot Co., Greaves Portland Cement and W. H. Hull & Son, of which Mr. Palin-Evans has a large collection numbering some forty wagons and twenty-five coaches. The locomotives range from an early Bing G.N.R. "single" to the more modern Bassett-Lowke L.M.S. 2-6-0, and all perform well in their sheltered surroundings. It is hoped in the near future to make additions in the form of a country station and more siding accommodation. Here, then, is re-created the atmosphere of the old days, with their clerestory-roofed coaches, to the accompaniment of the tang of oil and steam.



G.N.R. 4-4-0 and train of six-wheeled coaches.

Above : Midland compound running light. Below : the Mogul on an up goods.

DO IT YOURSELF No. 19

GARDEN RAILWAY BUILDINGS

by Peter B. Denny

IT is sometimes suggested that timber is not a suitable material for the construction of model buildings which have to stand up to the climatic conditions of this country. This has not been my experience, however, and although only time can tell how long wooden buildings can survive out of doors, I am of the opinion that if they are constructed with suitable wood and on sound lines and receive periodic maintenance their life will be considerable. I have had buildings out in the garden for over three years; they have survived some of the hardest winters we have had recently, being frequently buried under snow and ice for days on end or drenched in torrential rain, while during the past summer they have stood up to continuous hot sunshine. In the following notes therefore I shall not describe the construction of any particular buildings, but the general methods I have employed and which I have so far found satisfactory.

Materials

Let me begin by saying that the buildings I have made have all been in 10mm. scale, and although the method should be equally suitable for 7mm. scale some of the finer work must inevitably be that little bit finer, with a resulting loss in stability. But bearing that in mind, it should be possible to choose or adapt suitable prototypes which lend themselves to sturdy construction in 7mm. scale. The first thing to consider is the choice of materials. I can only write from my own experience, but I have found a wood known as parana pine excellent in every respect. It is a semi-hardwood and is used in the west country for making the doors and window frames in houses. It varies in colour from a deep red to pale yellow, is easily cut and is usually free from knots—a very important consideration. It can be purchased in planed planks up to 12in. wide and is not expensive, the $\frac{1}{8}$in. thick variety working out at about a shilling a square foot. This has been the basis of all my buildings.

Marking out

Assume then that we are going to construct a building as in Fig. 1—it can be anything, depending on size, from a platelayers' hut to a two-road engine shed, and it will be found, moreover, that station buildings usually consist of nothing more than a number of such "boxes" put together. First mark out on the wood the sides and ends, seeing that the direction of the grain is in the direction of the arrow (Fig. 2), otherwise we shall increase the chances of the sides and ends caving in or bulging out. With gabled buildings (such as we are considering) it is perhaps best if the ends overlap the sides (Fig. 3), and this will mean that the sides should be shorter than the overall dimension required by twice the thickness of the ends. Use a set-square when marking out on the wood, be careful to see that all angles all right-angles and do not assume that the corner of the piece of wood you are working on is a right-angle—it may well not be so! When all is marked in position (and a little time carefully spent at this stage in checking all measurements is often well worth it), cut out, using a piercing saw for windows and doors. It is an advantage if the top of the side can be cut to the angle of the roof (either with a fret machine or planed to an angle), but provision must be made for this when marking out (Fig. 4). When all are cut out remove burrs and rub down with fine glasspaper.

Assembling

The buildings can now be assembled. Begin by fastening an end to one of the sides. Drill two $\frac{1}{32}$in. holes $\frac{3}{16}$in. from the side (assuming the ends are $\frac{1}{8}$in. thick) and tap in two 1in. veneer pins (Fig. 5). Veneer pins in various lengths are particularly useful for this kind of work. They are obtainable from large ironmongers, but must not be confused with panel pins, which are much coarser. Now paint both edges where the joint is to be made with a thickish paint, preferably a hard gloss, i.e. one containing varnish; this will help to seal the joint against damp. Place the edges together and, lining up with finger and thumb, make sure all is flush and tap the pins home. Never mind the paint getting on your fingers—it is a good idea to use white paint and keep a rag soaked in white spirit handy to clean up not only your fingers but also the woodwork as you proceed. Fix all four corners in a similar manner and test with a set-square to see that all is true. The pins will not be sufficient to hold the sides together, but their purpose is to enable the joints to be made perfectly and the angles set square. Holes should be drilled for the pins, because when being tapped into wood at the edge of a grain (Fig. 6) they have a tendency to split it, but there is no need to take the hole through into the second wood. The final fixing should be completed with screws. Suitable holes should be drilled—avoiding the positions of the veneer pins of course. It may be found helpful if two sizes of drill are used, one for the lower part of the hole and one for the upper part (Fig. 7). It is important that the shank of the screws should not press too heavily on the wood, otherwise the tendency is to split it again. Countersink the top of the hole so that the screw is flush with or slightly below the surface of the wood and fill up, if necessary, with putty. How many screws to put into a joint depends on its size, but at least two and not less than two and a half inches apart is quite a good rule.

Reinforcement

If the building is quite small, say not more than 8in. x 6in., it should be unnecessary to reinforce the walls in any way, but if it is a large one, such as in the case of a goods or locomotive shed or a large station building, some reinforcement will be called for. The simplest method is by internal partitions, fixing between the sides at, say, six-inch intervals pieces of wood similar to the ends (Fig. 8). But while this is possible with station buildings it is not possible with goods and loco sheds. These are best dealt with by fixing, again at six-inch intervals, pieces of 1in. and $\frac{1}{8}$in. wood as in Fig. 9. These should be pinned and screwed in place, not forgetting the paint between. On brick-built buildings they can be on the outside and can represent buttresses, but on stone-built buildings they should be on the inside, and personally I would prefer them on the inside, since these small pieces of wood may have a tendency to warp. This is only my hunch; I have always put mine on the inside. The tops of these strengthening supports should be linked across with similar pieces, and to these should be secured triangular sections to give additional strength to the roof (Fig. 10). Similar support should be given to any large openings in the walls such as in the side of a goods depot or the end of a loco shed (Figs. 11 and 12). Slightly different treatment will be required for arched openings, and this should be clear from Fig. 13, where the arrow indicates the direction of the grain of the supporting pieces. Window openings up to 3in. x 3in. should not really need any reinforcing.

External Details

Turning now to the outside of our building, we are beset with problems of lintels and sills. The method of sticking on bits of wood or card just will not do; sills must be cut and fitted properly. Fig. 14 shows how this can be done. Two slots are made at the lower corners of the window and a piece of wood is forced in and fixed in place (Fig. 14a). This must be remembered when marking out the wood for cutting in the first place. Lintels can be treated in a similar manner, although here perhaps the best method is to cut the lintel out with a fret-saw, move it forward slightly and fix with a waterproof glue (e.g. Durofix), finally drilling and piercing with a veneer pin inserted from underneath. Curved arches can also be dealt with in this way, or alternatively just the keystone only (Fig. 15), while the arch work can be represented in paint, as will be described later on. When fretting out

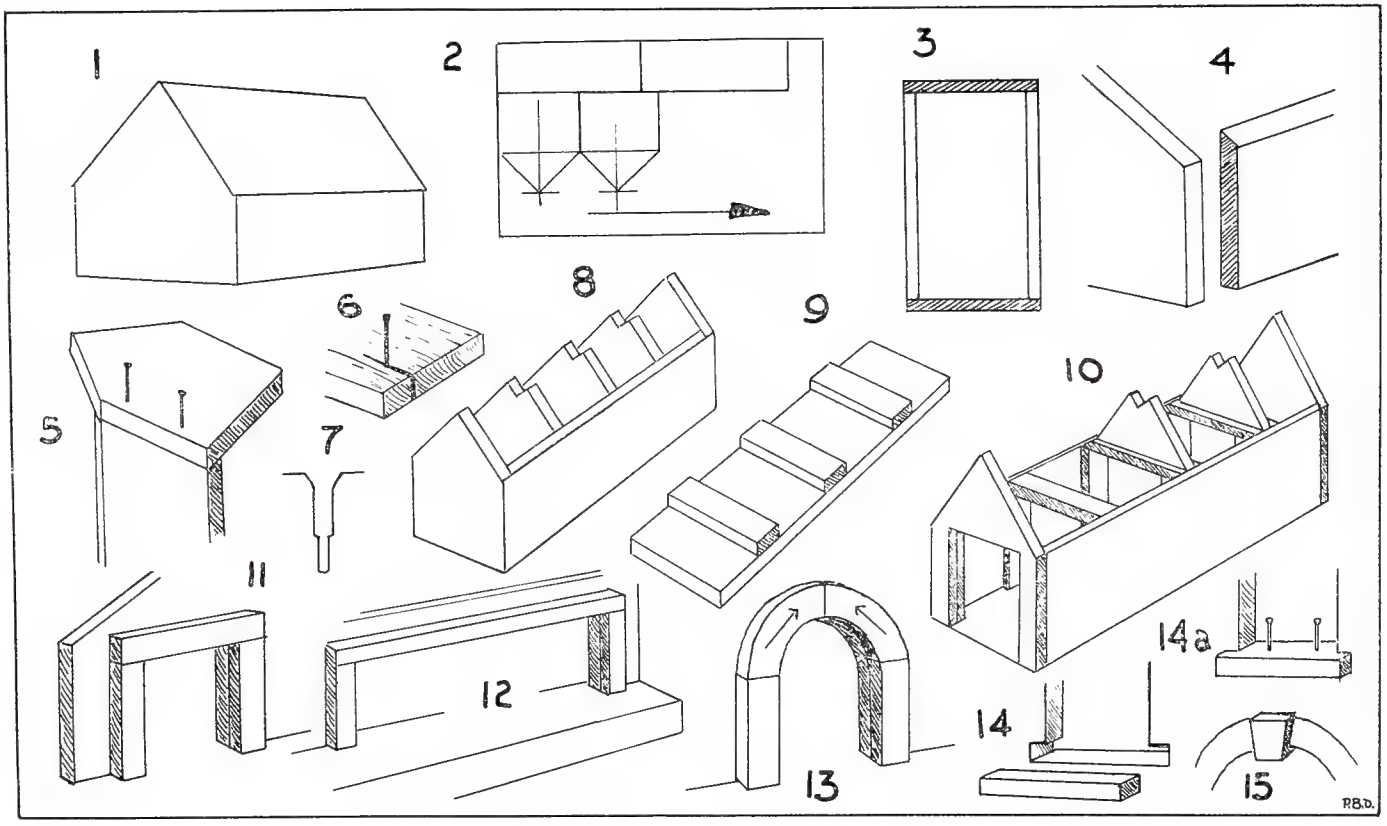
such pieces it is important that a fine fretsaw blade should be used so as to reduce to the minimum the gap that has to be filled with glue. If, however, one still prefers the way of sticking on bits and pieces I think I know how it can be done; although so far this method has not yet had more than one winter out of doors, I believe it will work. The material to use for lintels, arches, keystones, etc., is a thin roofing felt stuck on with a rubber solution gum such as is used by photographers for mounting prints. This method has many possibilities, e.g. it can be used to make a plinth to a building (Fig. 17) or quoin stones (Fig. 18), and I shall have more to say about this shortly.

Bricks and Stones

Meanwhile, having completed the building so far, i.e. sides and ends, sills, lintels, etc. (if of a raised nature), it is now ready for painting. Two coats of a *flat* cream undercoating should be given, allowing each to dry thoroughly before applying the next. We can now proceed with representing the brick or stone work of the finished building. If brick is the chosen material, give the model a coat of a suitable red (signal red with a little brown added will do), and *while the paint is still wet* take a piece of wood with a sharp point and, using it as a scriber, draw horizontal lines to represent brickwork. At first it may be found difficult to do this evenly. The secret is to paint one side at a time, have a piece of wood marked off with the appropriate brick spacings, hold this against the edge and just mark the position of each course. Do this on each side of the wall to be painted (Fig. 19). Then build up a "wall" on each side just above the surface (Fig. 20)—the children's bricks will come in useful here—and, placing a ruler, across, join up the appropriate marks. When the mark is made it should reveal the cream undercoating sufficiently to suggest the pointing of brickwork. The vertical lines can be added in a similar manner. It is a good plan to decide on the particular bond of brickwork and to copy this (Fig. 21 illustrates two typical bonds). Stonework can be reproduced in a similar manner by using a brown paint mixed with white and a little green as required. A typical stone bond (if that is the correct term) is shown in Fig. 22. This is often so irregular that it will be possible to dispense with the initial markings, although the block and ruler will be required. An ordinary ruler is a little too straight, and I made myself a crooked one. It is quite simple—just a beginner's attempt at cutting a straight line with a fretsaw! Do not forget to paint the edges of window and door openings (these can be marked out freehand). The finishing touch can be added by pricking out certain of the bricks or stones with a slightly darker or lighter shade, and the whole when dry should receive a coat of good quality varnish. Glossy brick or stone work may look a bit odd at first, but the weather will soon put that right. It is possible to dull things down more rapidly by adding a coat of semi-matt varnish on top of the glossy varnish. The varnish is very important; it preserves the paint against the weather and when it wears thin a further coat should be added—this is one of the chief maintenance jobs. I do not think that a semi-matt varnish on its own has such protective qualities as the glossy, and therefore the latter must not be dispensed with when and if the former is also used.

I have noticed, however, that during the past summer walls which have had a southern aspect and have been fully exposed to the unremitting rays of the sun have blistered in a few places and will require repairs. Seeing this, I thought around for another method of treatment, if possible something that gave a more undulating surface than wood. The answer was roofing felt. I have used this quite extensively now, fixing it in place with a rubber gum and, to make quite sure, tacking it here and there with $\frac{3}{8}$in. brass track spikes. While on the question of rubber gum (otherwise photographic mounting solution), I have come across two distinct types. One, such as "Cow" or Dunlop's D.S.P., seems to break the surface of the roofing felt when it is applied, with the result that the bitumen in the felt gets on one's fingers and makes an awful mess. The antidote is "Zoff" or "Plaster Remover." The second variety is known as "Kleenstick." It is a white solution, is much cleaner to use, since it only creates a thin rubber film, appears to be perfectly satisfactory, and only has the disadvantage that it smells horribly! After all that let me make the usual disclaimer that I have no financial interests in any of these products. When the roofing felt is in place it can be scored with a blunt tool (I use an old reamer) to represent the divisions in brick or stonework. To get the appropriate colour for stonework it is only necessary to dab on some flat cream paint and then to rub it over with a piece of rag. The more you rub, the more brown the felt becomes as the bitumen gets mixed in with the paint. The paint, moreover, will settle in the scoring and represent the pointing. The art is not to rub too much; trial and error will alone show. I have not actually used this method for brick work, although it should be equally effective, using, of course, red paint instead of cream.

Norris Green station building on the author's railway. When this photograph was taken the building had been out of doors for three years without more than routine attention.



Windows

The walls of our building are now complete and we can proceed with windows and doors. Window frames can be built up from pieces of brass bar from $\frac{1}{16}$in. square upwards. An example of such a window is shown in Fig. 23. This is an admittedly difficult window—modern ones can be simpler. Begin by bending a piece of $\frac{1}{16}$in. square-section strip to the shape of a "U" (a) and fitting it into the window opening. When it is a good fit cut another piece (b), fit in place and solder the joints. Then remove and place on a plan of the completed window drawn out on paper, fixing in place with pins (Fig. 24). Now cut and solder in the intervening sections. If any difficulty is found in bending the bar a succession of nicks with a saw on the inside of the bend will facilitate matters. The window frames can now be put in position and bedded in with paint, and if holes are drilled at the corners small brass nails can be inserted to hold the frame in place. It should now receive three coats of paint.

An alternative material for windows is wood. I used it with a certain amount of hesitation at first on account of the smallness of the pieces involved, but so far it seems to be standing up to the weather extremely well. A really good quality wood is essential—I used the wooden sides of an old camera tripod. The cutting into strips $\frac{1}{16}$in. x $\frac{1}{8}$in. and $\frac{1}{16}$in. x $\frac{1}{16}$in., can be tricky unless a fret machine, or similar machine saw, is available. The window is built up in the same way as described above, although it would not be easy to make that particular arch-shaped window. The window framing is best built up completely in the wall opening, the pieces of wood being fixed in position individually with "Durofix" or a similar glue. The glue should be applied as per the instructions: "a coat on each side of the joints, left to dry, then a second coat." The best glazing material I know is $\frac{1}{16}$in. perspex, which can be cut to shape by scoring with a sharp tool and splitting in the same way as glass, although curved portions must be cut with a fret-saw. It can be placed in position behind the window framing and held in place with small pins (Fig. 25).

Doors are best kept closed, as are windows, otherwise they only let the rain in. The door openings should be fitted with a framing similar to that for the windows, only this time the lower piece will not be necessary. The door itself can consist of a piece of wood cut to the same size as the door opening and marked out appropriately and fixed in place with glue and pins. It is not a good idea to use the piece of wood that was originally cut out when the opening was first made, since it is best if the grain in the door runs vertically, otherwise it may warp badly. Boarded doors can be represented by scoring the wood, panelled doors by painting and lining with black indian ink before varnishing, or a panelled door can be made up with roofing felt.

Roofs

My method of making roofs is to use a thin roofing felt superimposed on a suitable foundation. I have tried hardboard, plywood and asbestos. The last is by far the most successful, but is very trying stuff to cut. Plywood is hopeless; a waterproof hardboard has proved quite successful. A piece of wood, cut to the angle of the roof, should join the two gables (Fig. 27), and if there are intermediate supports for the roof these should have been cut suitably to take this support before fixing (see Figs. 8 and 10). Pieces of hardboard or asbestos should now be cut for the roof and nailed, or in the case of asbestos screwed, in place. When working with asbestos all holes must be drilled. It can be cut with a fret machine using a medium-grade saw or with a hack-saw. Care must always be taken when cutting the last few inches. The edges and underside should be given the usual three coats of paint, but the upper surface left bare. Pieces of roofing felt should be cut to the appropriate size, coated with rubber glue, which should be smoothed over evenly with a piece of wood, and stuck in place. Slates can be represented by scoring the felt with a suitable tool (as described above for brick and stonework) both horizontally and vertically (Fig. 28). Finally the roof should receive a coat of thin grey paint and we shall have quite a good representation of a slate roof.

Ridging tiles can be formed by bending a strip of roofing felt and gluing in place (Fig. 29), the divisions between the tiles being scored on. An alternative method which I have used in order to produce the ornamental ridges often seen on Victorian buildings is to make the ridge itself out of a piece of copper foil, pinned and glued in place. Before fixing, however, a piece

of ornamental brass tracery which I had salvaged from an old box, and which when cut down made quite a good representation of this type of ridging, was soldered to the top of the copper foil. Other methods of achieving such effects will no doubt suggest themselves. One that occurs to me is to drill a row of holes in a piece of brass and then cut down the middle (Figs. 31 and 32). I would emphasize the importance of such details as roof ridging, chimneys, etc., for although these are the least significant items which we see when we generally look at a house from the ground, in the case of model railways we usually look down on them from above, and it is the roofs and chimneys which are the most obvious.

This brings us to the chimneys. The stacks should be of solid wood, finished in brick or stone in the same way as the walls. Although the obvious way seems to be that of setting the chimney stack in place before the roof is put on and then marking the roof to fit around it, I do not favour this method, since it will be difficult to prevent water seeping through the hole in the roof and doing untold damage. The chimney stack is best added when the roof is finished, simply cutting it to the appropriate angle and screwing in place from the underside (Figs. 33 and 34). Fancy details on chimney stacks such as in Fig. 36 cannot be built up in the conventional way by gluing on pieces of wood, but are best made by cutting out from the solid wood. First cut a piece of wood to the size of the widest moulding and then mark out the details on all four sides. Holding in a vice, make vertical and horizontal cuts with a hack-saw on all four sides, working towards the widest and horizontal part. Chimney-pots can be added by drilling holes in the top and inserting suitable pieces of brass or copper tube and painting.

Finishing Touches

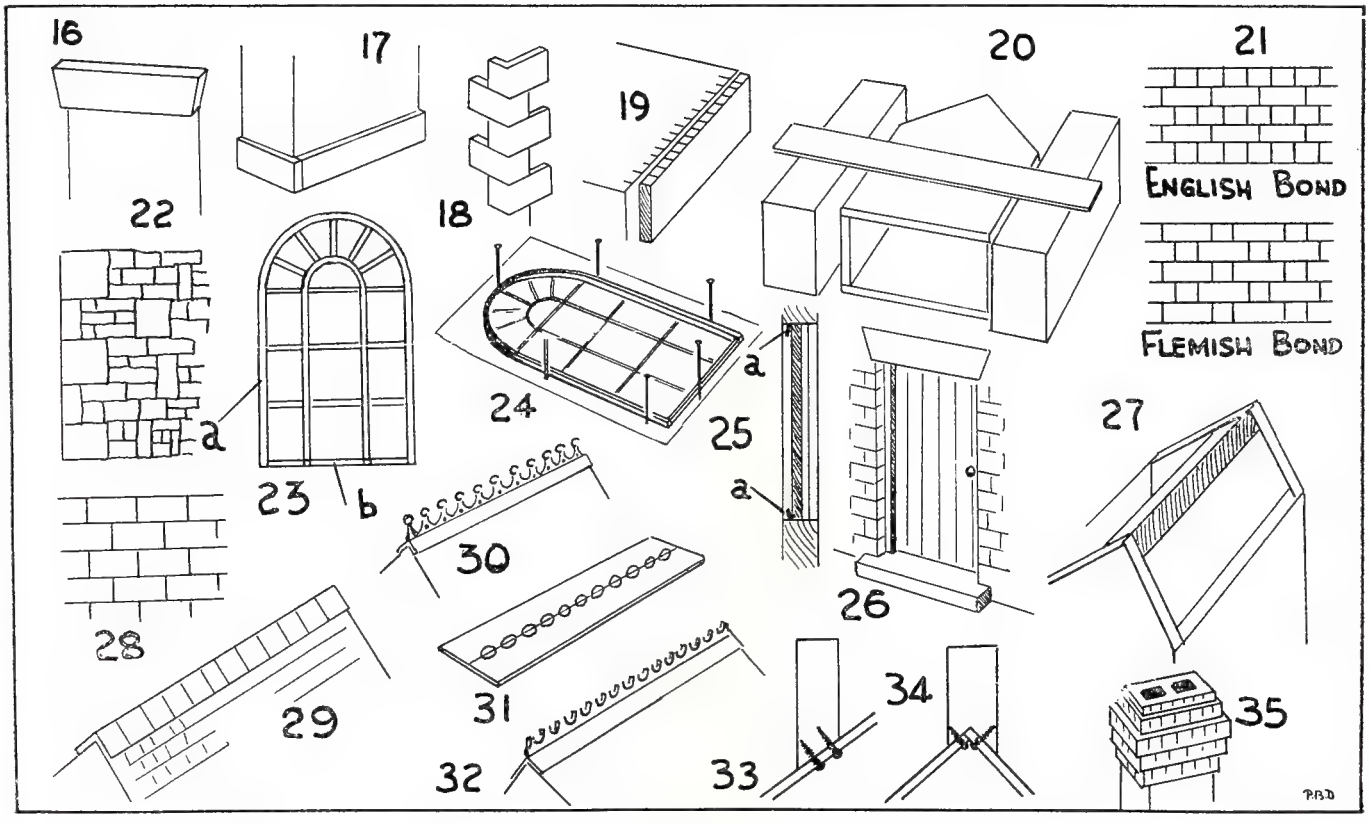
Barge-boards are best cut from fairly stout wood (say $\frac{1}{8}$in.) and fixed to the wall itself. It is possible to disguise the fact that they are over thick by painting the underside black with the exception of the front edge. Gutterings and down pipes could, of course, be made up from copper tube, but being so small they would soon become blocked and would not work in the way the real ones do. My method is to use $\frac{1}{4}$in. half-round wood for the gutterings, nailed to the walls with veneer pins. Down pipes can be made of $\frac{3}{16}$in. wood dowel and fixed to the walls with brass bands. The finishing touches to railway buildings are supplied by such things as posters, fire buckets, etc. The best posters are those printed on tinplate (pre-1914 I believe), such as are still obtainable from some model stores, and can be nailed on the walls and varnished. Fire buckets can be made by wrapping a piece of copper foil round a suitable former, soldering and trimming to shape. Handles can be soldered on and the bucket filled with putty, which can be painted black to represent water. No one will know that the bucket has no bottom! They should be arranged in rows soldered to nails inserted in a short length of metal and fixed to the walls.

Foundations

It is perhaps a little odd that we come in model buildings last of all to what should be the first consideration—foundations. In fact my buildings have none, at least not in the usual sense, for they all end (or should it be begin?) at ground level. All I do is tar the bottom edges and place them on the ground. Incidentally, none of the buildings have floors; if they did the floor should not touch the ground, but there should be an air passage—as in real practice. The ground on which they rest is, however, specially prepared. It consists of six inches of ashes, but then things drain away very well in our part of the world and it might be necessary elsewhere to provide artificial drainage (e.g. large stones) below this.

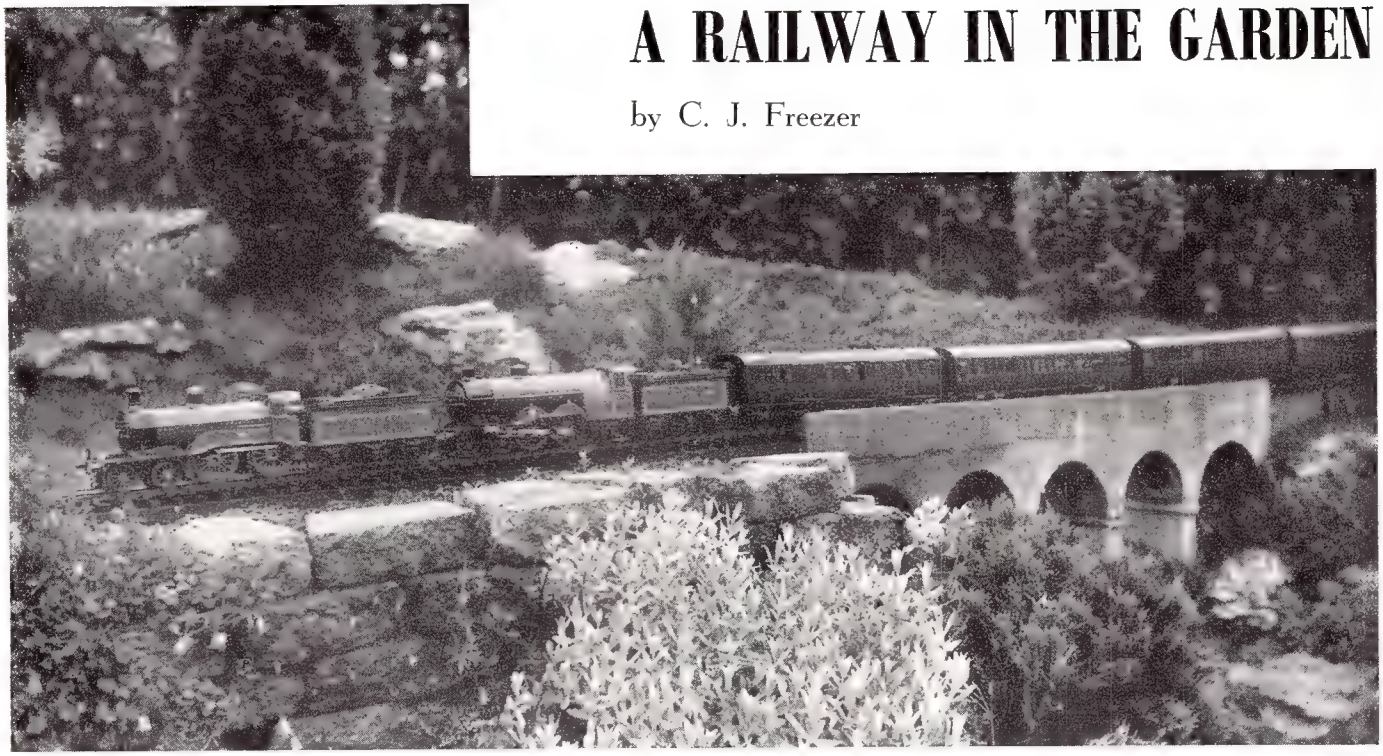
Conclusion

I have covered in these notes only such aspects of outside buildings as I have made myself and have found satisfactory. There is much more to be said, and possibly there are many and better ways than I have so far thought of and described. All I have sought to do here is to suggest the fundamental principles on which others can build, adapting and developing to their own particular requirements. I am certain that any type of building can be constructed, and when well painted or covered is reasonably weatherproof. It will be necessary to examine it from time to time and repaint and revarnish when required; otherwise it should require little attention, and we shall have the pleasure of seeing it bathed in sunlight, washed with the gentle rains or set amid the winter's snow—and believe me, there is something very realistic about a railway in natural conditions.



A RAILWAY IN THE GARDEN

by C. J. Freezer



W. Banwell's Maycroft Railway shows how well garden and railway can blend.

ONE of the most surprising developments in post-war years has been the near eclipse of the outdoor railway. I know that "O" gauge has lost its old proud place as the premier scale, and that there is nothing like the range of proprietary equipment about nowadays. Yet despite the loss of many fine models there is still plenty for the beginner. In my schooldays a small group of us worked a very joint (at times more disjointed) "O" gauge system with stock and track which still remains in the Hornby list—though somewhat improved nowadays! In view of the fact that the outdoor railway offers, for most people, the principal opportunity of adopting "O" gauge, one can perhaps assume that the reason lies in the fact that this possibility is being overlooked when planning the layout. Alternatively, there may be the feeling that an outdoor railway would conflict with the proper use of the garden. In this connection it must be admitted that many layouts that have been illustrated in the past do fail very badly in this respect, no matter how effective they may be when considered solely as model railways.

There are, in fact, two approaches to the outdoor railway. The most straightforward one is to treat the problem exactly as if it were an indoor railway, except that weatherproof materials are used throughout. The line is carried entirely on baseboards raised three feet or so from ground level, frequently without any attempt at disguise. While this sort of treatment is quite in place in a walled yard—an excellent example of this appears on pages 150 and 151 of this issue—it does look out of place in a more open situation, and where the house enjoys attractive views it could be a positive eyesore. More important still, scenic work on such a system is to all intents and purposes out of the question and there is no doubt that nowadays scenery is vital.

Yet the garden is really the best place for a scenic model railway! You are surrounded by literally tons of one prototype ingredient, while if you only take the trouble to dig deep enough—in my garden this seems to be some six inches—you can unearth enough scale rocks to make a fine selection of outcrops all over your rolling hills. For a few shillings a good nursery will supply you with a prototype tree that will not grow out of scale for years, while there are plenty of small alpine plants to add colour. All you have to do is to locate the railway on or near ground level.

This arrangement has some disadvantages, particularly if the ground is fairly level, in that the best height for operation purposes is some 36in.—40in. above the level of the operator's feet. An ideal site would be one where a large tract of undulating ground was available, perhaps with a large garage or outbuilding on a low level which could be used to house the main station. Failing this, a garden with a fairly rapid fall towards one end comes second in convenience, but if one does happen to have a level plot some heavy excavation is indicated. Principally you will have to dig operating pits by the stations, but some further excavation, perhaps producing a rock garden as a by-product, will almost certainly be needed. While this sounds hard work—and for that matter it is quite strenuous—it is certainly no harder than baseboard construction, with the added advantage that the skill involved is considerably less and the bulk of the materials cost nothing.

In these general remarks I have been considering the case of a virgin garden, but where the railway is to be built in an established scene, or in one partially established, as for example would be the case if one were to take over a second-hand house, the planning is complicated by the presence of existing trees, shrubs, plants, lawns and pathways.

Whatever the case, the railway must be planned to blend into the garden. Where it runs along a flower bed, matters must be so arranged that the taller plants lie behind the line. Movable bridges should be built over all well-used paths, unless it is possible to tunnel under these without too much trouble. However, where tunnels exist, access other than by digging the whole affair up must be provided in one form or another.

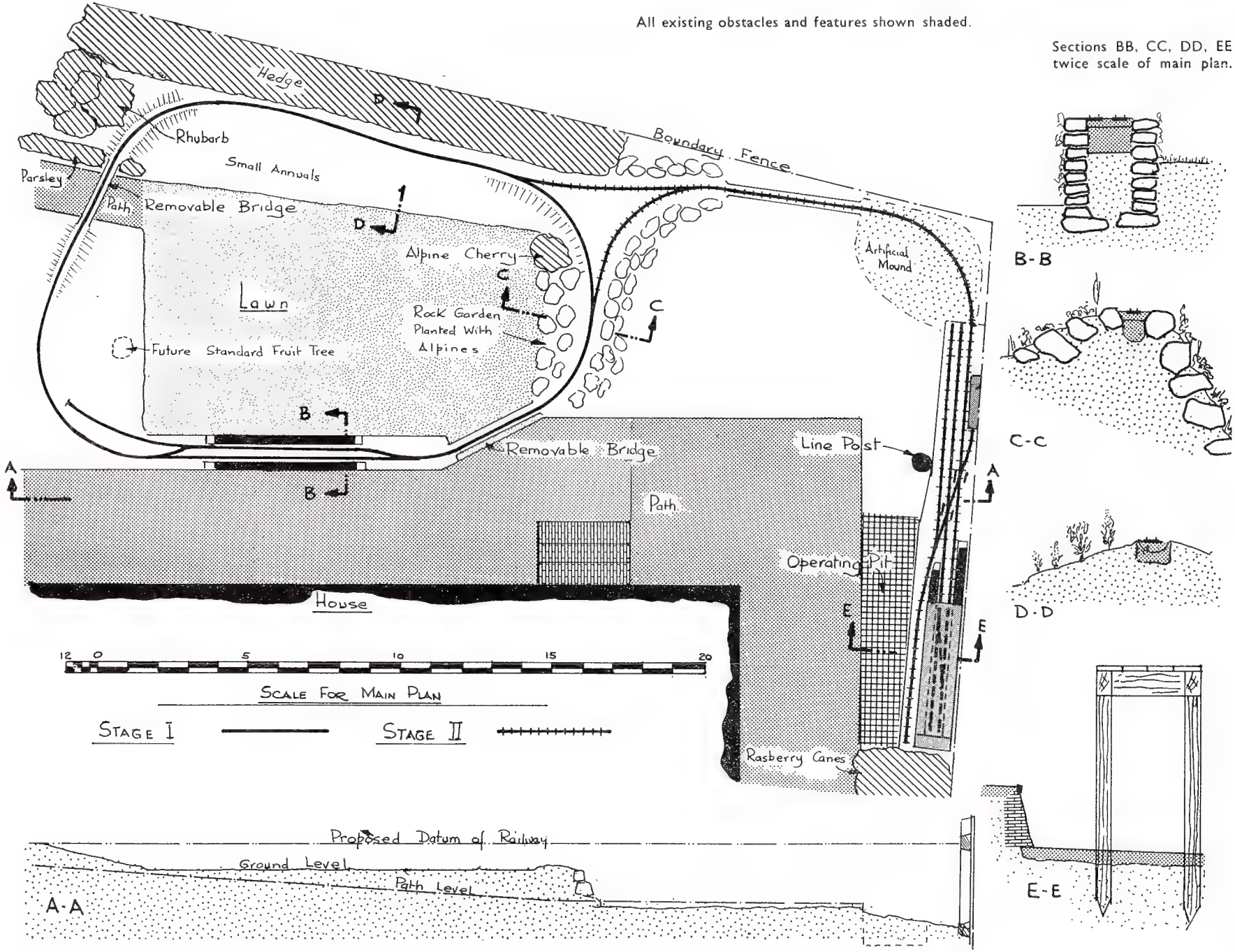
The accompanying plan shows a scheme for my own garden which has been taking shape for the last six months or more. Whether I shall ever build it remains to be seen. The project has been divided into two stages, a basic circuit just large enough to permit a small clockwork locomotive to make a circuit on one winding, with a later extension via a triangular junction to a moderate-sized terminus should I really get bitten.

As the principal section shows, the

(*Continued on page 158*)

All existing obstacles and features shown shaded.

Sections BB, CC, DD, EE
twice scale of main plan.



CONVERTING A TRI-ANG "OO" GAUGE SADDLE TANK

by Alan Wright

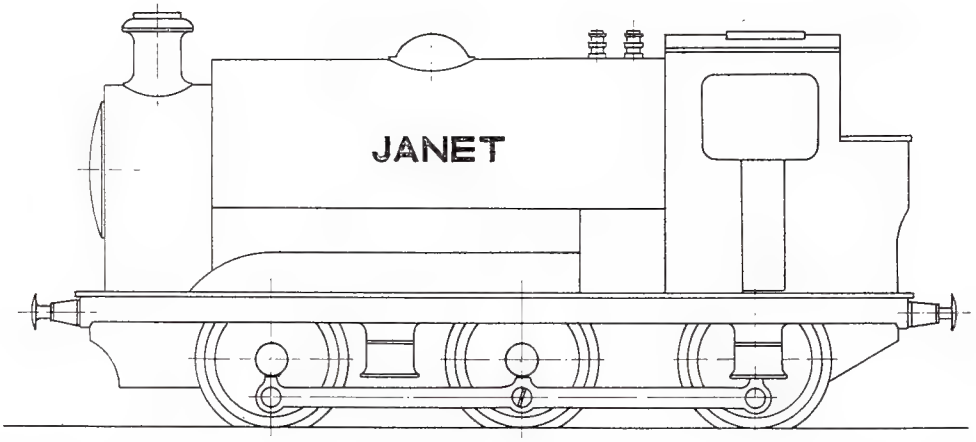


Fig. 1.

THE performance of the Tri-ang diesel loco in the Wright Lines stock led the management to acquire one of the saddle-tank locos, R153.

It was with dismay that I found the loco would not clear the W.L. loading gauge. As this loco, like the diesel, is to take a clockwork mechanism, the body has been built high, but unlike the diesel the footplates prevent the mechanism being let farther into the body. An examination of the body showed that it was made in two portions, a footplate-splasher-smokebox unit and a bunker-cab-tank unit. Fig. 1 shows the loco as rebuilt.

I thought that if the latter unit could be lowered by $\frac{1}{8}$in. the loading gauge problem would be overcome. Using a sharp razor blade, a cut was made along arrow A (Fig. 2), so separating the units. Here, two lugs hold the pieces together, but in addition they are cemented, so the cut was taken right across the back and as far forward as arrow B. Then, using a piece of a broken razor blade, the pieces were separated between the cab front and the misplaced firebox sides. This cut was taken as far as the underside of the saddle tank. Then the only thing holding the two pieces together was a lug under the smokebox; this was cut off.

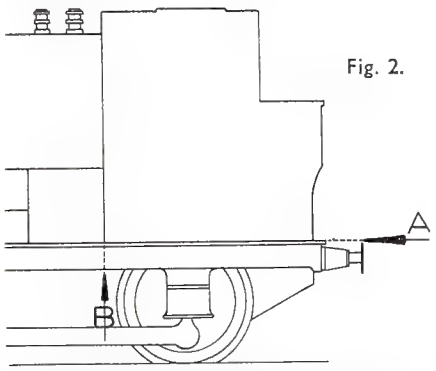


Fig. 2.

Now that the body was in pieces, the handrails either side of the cab door were cut off below the lower handrail knob. Then, by very careful cuts with the razor blade, $\frac{1}{8}$in. was removed from off the cab and bunker bottom, also the cut-out at the tank front for the smokebox was raised $\frac{1}{8}$in.

Turning to the lower portion, $\frac{1}{8}$in. was cut from the top of the misplaced firebox sides and, along the length of the loco, the grooves to hold the tank were cut off at arrow C (Fig. 3).

In reassembling the body, care was taken to see that no ugly gaps were left between the various pieces, and then they were held together with elastic bands. Using chloroform, the two units were cemented together. (Use the chloroform outside, *and do not inhale the fumes.*)

The chassis was dealt with as per the diesel; the new sideframes were cut exactly to the shape of the old ones though. (A plea to the trade. Will some kindly manufacturer produce axles to suit the Tri-ang frames and Hamblings wheels? I am sure there would be a demand.)

The body was next packed with Plasticine, room being left to just clear the motor. Apart from adding useful weight, it acts as a sound deadener. After oiling the motor bearings and greasing the worm (use Singer sewing machine grease), the loco was re-erected and tested. Passed as satisfactory, the paint shops took over.

The design of this loco is free-lance, but to me looks a bit like a Hudswell Clarke/Hunslet industrial loco crossed. To improve the looks, or at least what I thought improved them, I filed a radius on the cab roof, but perhaps you will not think this necessary.

The loco so rebuilt has fully come up to my expectations, and once again I would say that there is nothing wrong with the new Tri-ang motors. Well, I am going to use one in my model of a new British Railways diesel loco.

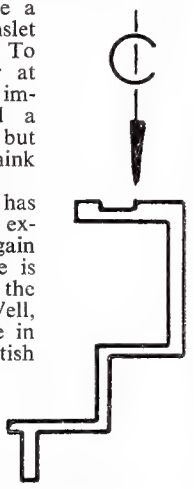
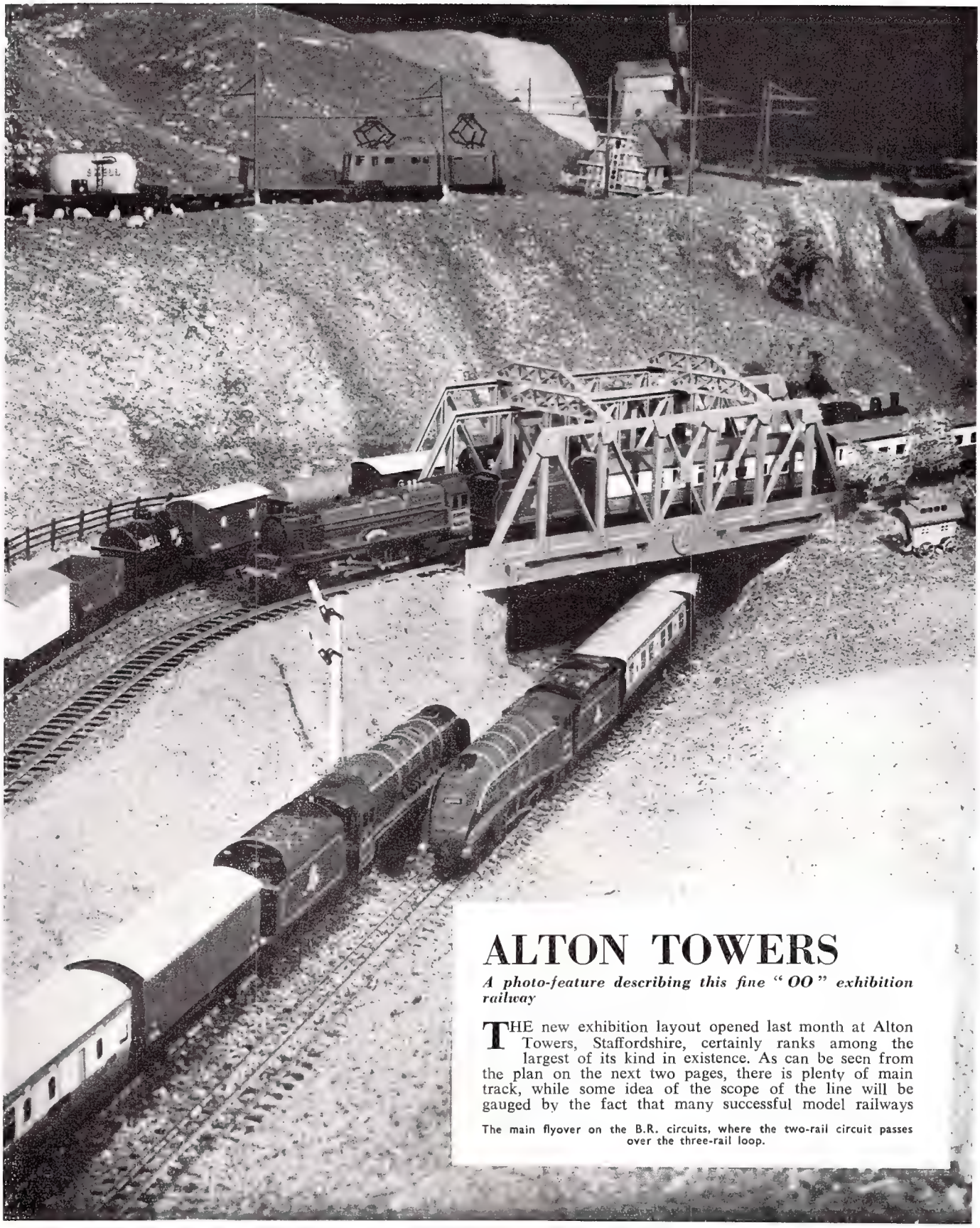


Fig. 3.

A RAILWAY IN THE GARDEN (*continued from page 156*)

ground slopes approximately two feet from the highest level to the lowest, and although a fair amount of building up is indicated this is no trouble, as elsewhere there is a spot where I have a mound that requires demolishing. I shall probably attend to this during the autumn, so that the made ground has plenty of time for consolidation before tracklaying commences. The layout has been designed to accommodate two trains, passenger and goods, at stage one, with two locomotives, and after stage two is complete three or four trains with up to six locomotives. I envisage clockwork power at the outset, but the possibility of a steam locomotive exists, while a limited degree of electrification in the station might be useful.

Simplicity has been the keynote of this design. I know the slip points in the main station can hardly be termed simple, but they can be replaced by pairs of points if desired. This does not mean that I consider that a garden railway should be simple, though the needs of track maintenance are higher and thus the simpler the layout is kept the more likely it is to function well. I do, however, consider that the initial plan should be straightforward, for even on a simple line like this there is still a considerable amount of track to lay down, and this takes time if nothing else. Remember that the garden railway is the easiest of all systems to enlarge—some additional tipping or excavation is all that is needed to provide a roadbed for double track, and bridges and viaducts have, naturally, to be doubled, but this is prototype practice anyway. Indeed, if you do intend to have double track you could well begin by preparing the foundations for this, but laying only a single track at the outset, in accordance with well-established practice. Indeed, one of the prime attractions of the garden railway is that here, if nowhere else, there is ample room for future expansion!

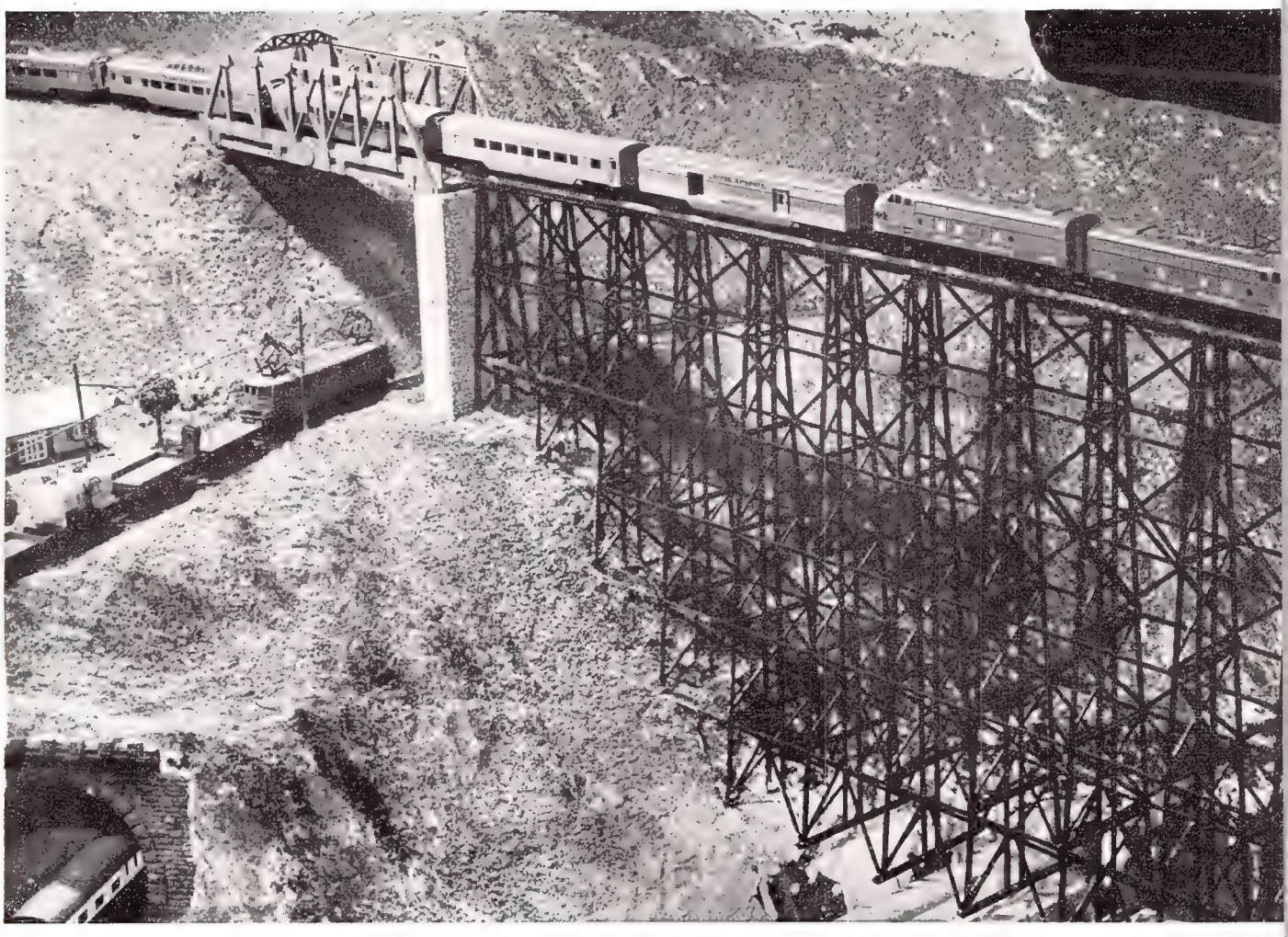


ALTON TOWERS

A photo-feature describing this fine "OO" exhibition railway

THE new exhibition layout opened last month at Alton Towers, Staffordshire, certainly ranks among the largest of its kind in existence. As can be seen from the plan on the next two pages, there is plenty of main track, while some idea of the scope of the line will be gauged by the fact that many successful model railways

The main flyover on the B.R. circuits, where the two-rail circuit passes over the three-rail loop.

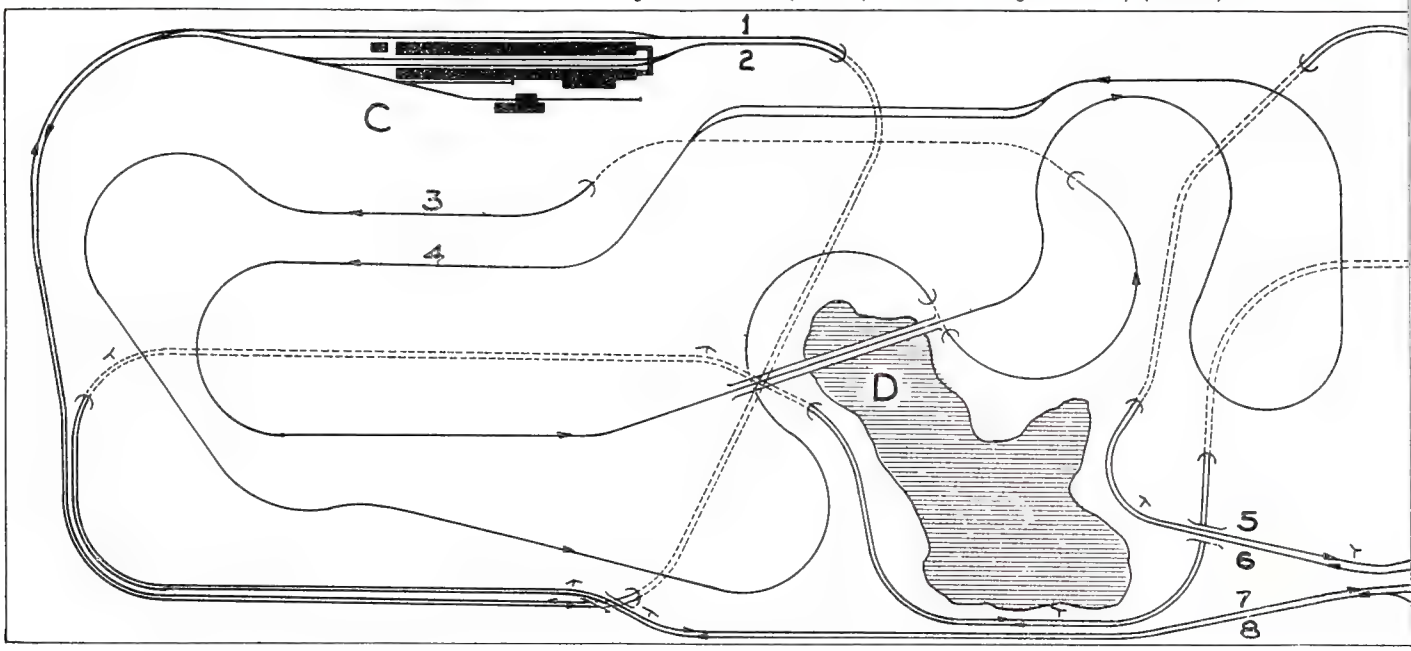


PLAN OF SYSTEM

A. Alton Towers.
B. Chapleton.
C. Yonside.
D. Talbot Lake.

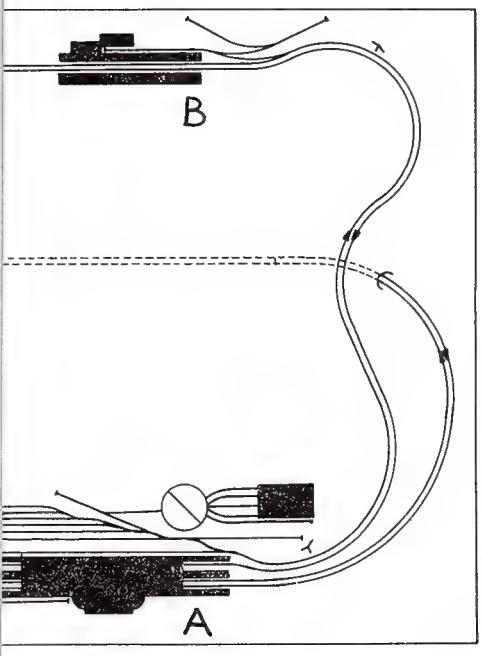
1. Hornby-Dublo up (three-rail).
2. Hornby-Dublo down (three-rail).
3. Rivarossi Italian O/H.
4. Tri-ang transcontinental (two-rail).
5. Tri-ang suburban down (two-rail).
6. Tri-ang suburban up (two-rail).
7. Tri-ang main line down (two-rail).
8. Tri-ang main line up (two-rail).

Tracks 1 and 2
Tracks 3—8 la



oway HD.
ay R.

This magnificent timber trestle carries the transcontinental line over Talbot Lake.



Tri-ang and Hornby-Dublo main lines run side by side.

(including that of the designer, Alan Wright) have been built in a smaller area than is occupied by Talbot Lake. This lake, incidentally, will be filled with real water, circulated by a pump so that a waterfall can be incorporated in the general picture.

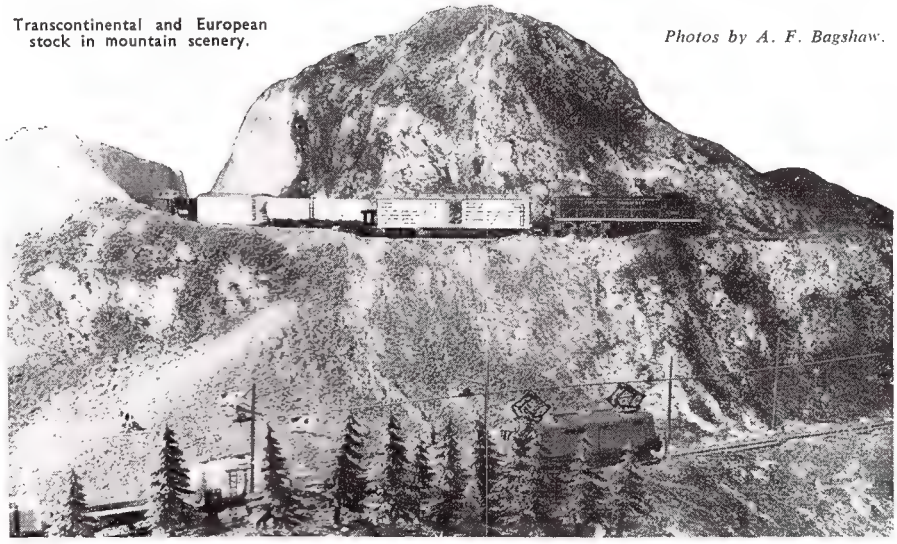
Five independent circuits are provided, three of which carry British models, two overseas. The highest circuit is a single-track two-rail system with Tri-ang transcontinental series stock upon it. Below this comes an overhead electric system powered with Rivarossi electric outline locos. Two two-rail circuits take British stock, both passing through Alton Towers station. One, which also passes through Yonside, is purely suburban; the other, which will at a later date be converted to a dumb-bell, is main line and has no other stations on its circuit. The third station, Chapleton, is served by a three-rail circuit, using Hornby-Dublo rolling stock and locomotives.

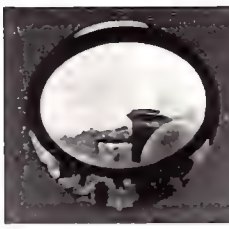
At present, in order to ensure that the line is in proper working order at the opening date, all attention has been directed on getting the basic circuits into full operation. A limited degree of automatic block working is envisaged—when we visited the line in May the special control circuits were being installed—and, with the aid of ex-government ratchet selectors, station stops are arranged in such a fashion that no set pattern could be determined by the visitor. Indeed, the setting has so many permutations that it would take at least a week to repeat an exact sequence, and then only by chance.

Needless to say, further developments are planned—hidden loops for train storage to make the picture more varied still; trolleybus and tram services to the principal stations; a cable railway from Chapleton to a hotel on the as yet unnamed summit, while there is a possibility of a single-track branch, worked by a diesel or electric shuttle service, linking Chapleton and Yonside. Indeed, on as large a railway as this there is always plenty of room for additional features.

Transcontinental and European stock in mountain scenery.

Photos by A. F. Bagshaw.





THE NARROW GAUGE LOOK

by Rick Green

Part II. CURVES AND CONTOURS

THE prime concern of the engineer surveying for a line up a valley like the Rheidol was to make it gain height as steadily as possible throughout, as he must never exceed the climbing capacity of the proposed locomotives (the construction of short steep banks to be "rushed" was by 1900 on the undesirable list). The route therefore became an evenly inclined ledge in the hillside which had to be carried across small cwms and round headlands without ever losing an inch of its hard-won height. Unless reversing stages were used, as on the Kerry Tramway, the height of the highest station dictated how far down the valley the line had to leave the riverside and start to climb in earnest.

It is an interesting speculation as to whether or not, once the preliminary survey was complete, the trackway could be pegged out more readily starting from the top and working downwards so that there should have been no error as to where climbing should begin, if indeed it was not actually so done.

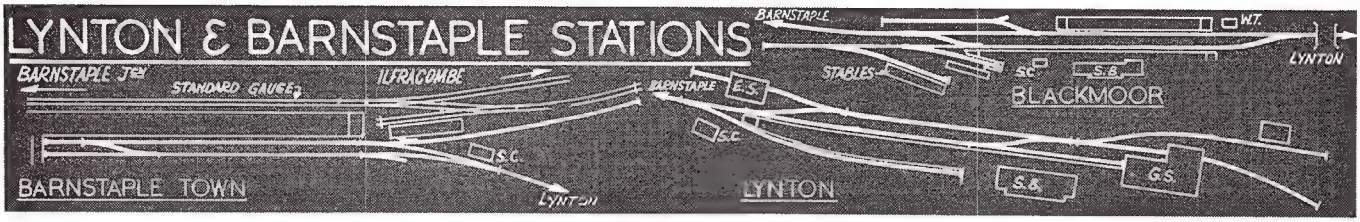
The first photograph shows the early stage (just above Capel Bangor) of the line's fight to build up a lead in height over the river bed which in its last furlongs had to equal the full height and more of the Mynach falls. Notice how the spoil from the shallow cuttings has been dispersed partly in making the rather wide bank for the far curve and partly by mounding it up parallel to the track, thereby making the bank from which the picture was taken a little higher than it would have been without the addition.

The second picture shows the tight curve against the rock wall before Aberffrwd. The track is on bedrock and the broad berm on the left is the spoil thrown downhill for convenient disposal. Note the thrust baulks or struts from sleeper ends to rock face, where there is barely a foot clearance for the stock, and the continuous check-rail of standard flat-bottomed section laid against the inner rail.

Past Aberffrwd the line takes a magnificent swing to the left along the top of a great artificial bank across the Ffrwd dingle, curving easily at first, tightening in the centre and then easing off to run smoothly into the straighter section in the cutting beyond as in the third photograph. No costly viaduct this—its materials were on the spot from two rock

Top : the early stages of the climb to the summit.

Bottom : a tight curve near Aberffrwd.



cuttings, the one visible beyond the crossing in the photograph which appeared on page 95 of the April 1955 issue, and the other shown here in photograph No. 4.

There is no large arch through the bank. The Ffrwd foams through a small opening and tumbles down a pretty glen and emerges at the roadside below by a farm, from which the milk churns may be seen in the summer half submerged in its cooling water.

On this curve too the long inner check-rail can be seen and a sharp curve like this of about 200ft. radius can be simulated readily in modelling without undue exaggeration. The top of the bank is about twelve feet across and there is a nine- to ten-foot width of clean ballast showing.

Observe too in all these pictures the stumpy capped telegraph poles carrying only two wires, varying in visible height from nine to fifteen feet, taking banks and cuttings in their stride. Sometimes the wires are twenty feet above the track on a bank and sometimes they are down to carriage level. In modelling we have to avoid too steep an actual incline, but a pleasant little illusion can be created by inclining a few telegraph poles the same way, particularly if the eye of the visitor can be deprived of any comparisons by putting curves to start and finish the leaning section and any dominant upright lines in the room are masked by scenery at layout level.

Even in the fourth photograph the rails are still not quite straight.

Part III will appear in September.

A wide curving embankment.

Nowhere is the line quite straight !

G.W.R. 38ft. 6in. SUBURBAN BOGIE BRAKE

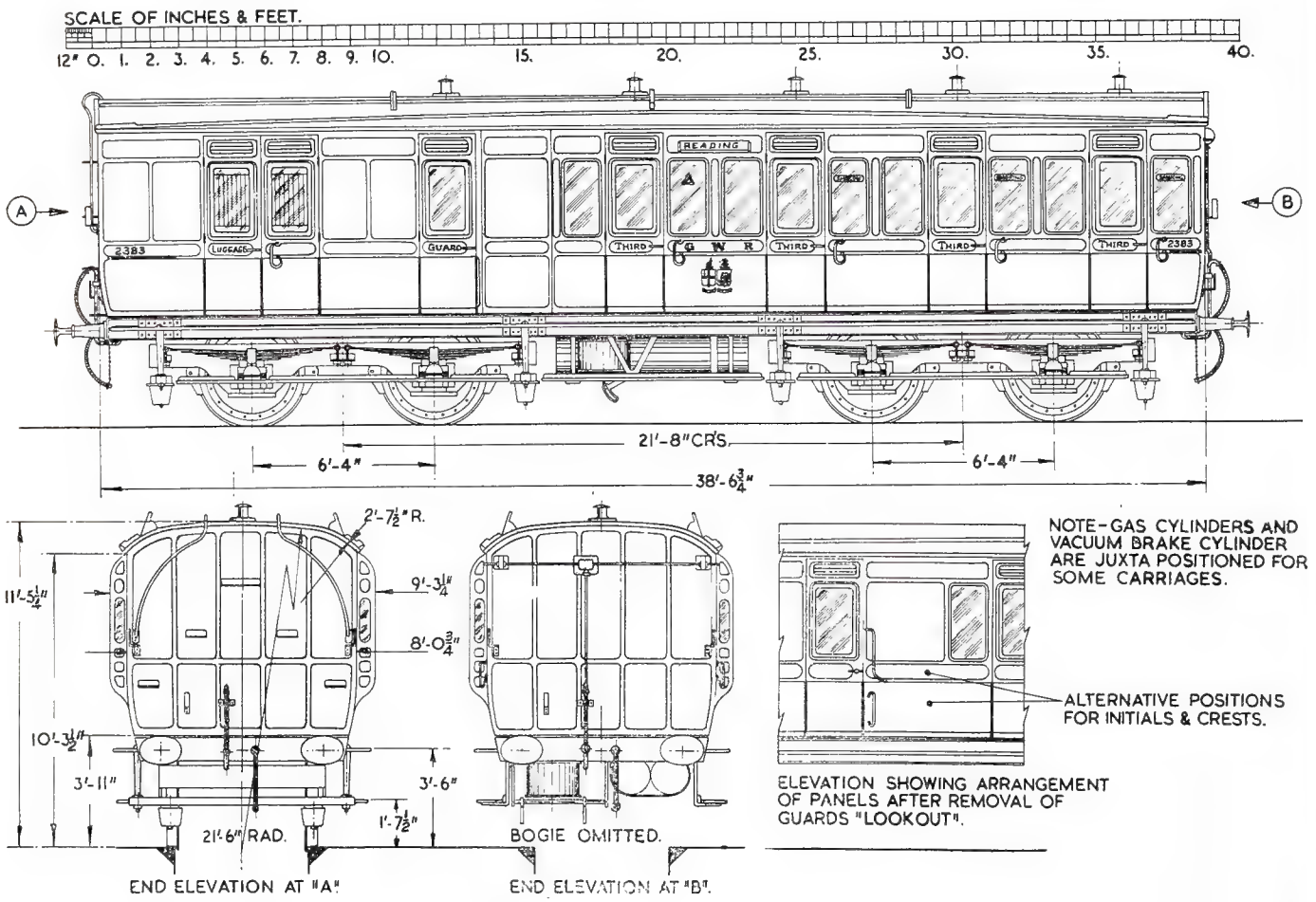


TABLE 1

	Built	Projections removed	Condemned
2058	1/96	12/27	7/36
2059*	1/96	9/22	8/49
2060*	1/96	9/22	6/40
2061	12/95	—	11/38
2062	12/95	6/23	4/32
2063	12/95	—	12/37
2064*	1/96	9/22	12/38
2065	8/96	—	2/40
2066	8/96	4/21	12/36
2067	8/96	8/22	4/34
2863	9/94	7/25	8/36
2864*	9/94	10/27	12/50
2865	9/94	10/21	6/33
2866	9/94	12/21	4/49
2867	9/94	—	8/39
2868	9/94	6/24	4/32
2869	10/94	2/21	3/40
2870	9/94	—	12/35
2871	11/94	1/23	3/40
2872	3/95	4/21	2/37
2873	4/95	9/22	6/36
2874	8/95	8/23	8/39
2875	4/95	—	7/33
2876	5/95	8/22	11/34
2877	5/95	—	11/38
2878	5/95	—	10/33
2879	5/95	9/22	4/36
2880	6/95	2/24	9/32
2881*	6/95	1/29	6/38
2892	6/95	—	10/35

* See Table 2.

DRAWINGS AND NOTES BY T. L. JONES

Full size 4mm. scale.

POSSIBLY the greatest single difficulty which confronts the average modeller is that of acute space restriction, governing as it does the radius of track curvature and the length of the trains which can be reasonably accommodated.

So frequently the latter consideration is met by using vehicles, generally following no specific prototype, of such length as to enable the easy negotiation of sharp curves and to enable three or four vehicles to be accommodated in a comparatively short space. (Such vehicles are far too often described by the hideous term "shorties"—a description more suitable to certain types of underwear than to railway carriages.)

To the modeller whose problem is that described, a prototype carriage with a modest overall length of less than forty feet is likely to be of some interest and such a vehicle is illustrated in the drawing. The carriages were introduced to "top and tail" close-coupled sets of four-wheeled stock, mainly the London suburban services, but on the breaking up of the four-wheeled carriage sets they gravitated pretty well all over the G.W.R. system. They can, therefore, be quite legitimately modelled for any model railway of G.W.R. basis. The data sheet which accompanies the drawing gives a brief but complete table of building dates, "condemned" dates, etc. From this it will be seen that the last of the vehicles "passed on" in December 1950. This precludes their use on model railways purporting to represent any period after this date—unless, of course, the conscience which stretches far enough to allow a "King" to run round the edge of a soup plate will stretch a little farther and allow the blind eye to view the last column of the data table!

TABLE 2

Original No.	To 2nd class Date	To 2nd class Number	To 3rd class Date	To 3rd class Number
2059	4/99	5257	5/12	2382
2060	12/98	5256	2/12	2383
2064	1/96	5254	2/12	2384
2864	11/98	5255	1/12	2385
2881	5/99	5259	4/11	2386

AS 3rd CLASS 40 SEATS
AS 2nd CLASS 32 SEATS

TT AS NARROW GAUGE

A 4mm. scale narrow-gauge line laid with Peco "TT-3" Spiked Track.

WHILE "TT-3" has meant for many readers the chance to build a railway of reasonable scope in a restricted space, it has also meant, for a particular band of specialists, the opportunity of modelling narrow-gauge railways in 4mm. scale without having to work entirely from component parts.

As a basis for narrow gauge, "TT" is particularly convenient, for in 4mm. scale "TT" track represents from 3ft. to metre gauge. Immediately there springs to mind the beautiful prototypes in Ireland, and, of course, the ever-popular Isle of Man Railway, all of which adopted this useful gauge. Although so far no one is offering ready-made "OOn3"* models, the Triang stock has been used, experimentally, as a basis for conversion—the standard chassis can easily be fitted with a narrow-gauge body, and the locomotive chassis will almost fit "Caledonia," the I.O.M.'s solitary 0-6-0T, provided some fractional differences in wheelbase are ignored and the boiler collects a belpaire firebox.

Although 3ft. gauge might seem the most obvious, alternatives exist. An enthusiast who wished to model any of the 2ft. gauge lines might consider the choice of 6mm. scale on 12mm. gauge. This gives an exact scale/gauge ratio, but, better still, 12mm. gauge could be used in conjunction with 7mm. scale, for the error here is less than with the more common 16.5mm. gauge, and would indeed be far and away more suitable for any models with outside framing, such as Lynton, Barnstaple or Vale of Rheidol locomotives, while the true narrow-gauge look will be attained. Few components directly aimed at the narrow-gauge modeller are at present available, though a limited range of 4mm. scale components has recently come on to the market.

However, this is not so serious a matter for the narrow gauge modeller as it would be for others, because it is possible to use fittings from a smaller scale, and thus "TT" underframes and bogies can be used for narrow-gauge stock, the lighter construction of narrow gauge generally assisting matters.

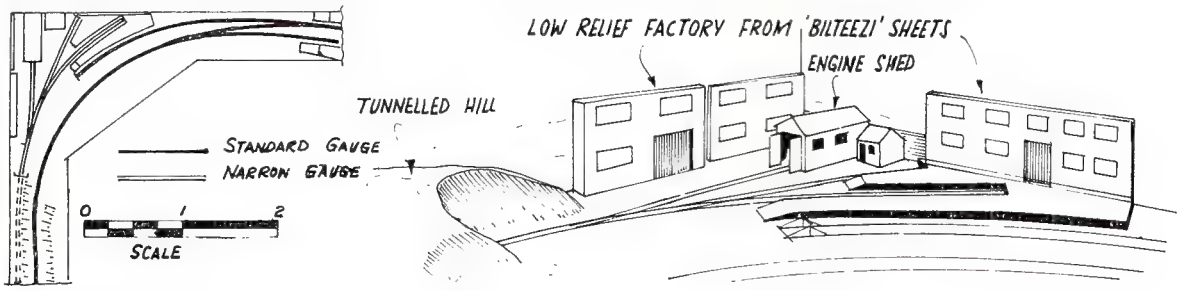
The principal advantage of utilizing a standard gauge for a smaller scale to produce a narrow-gauge system is the convenience of using standard track components. In this respect the Peco Spiked "TT" Track and Point packs are particularly useful; as this track is a universal track for "TT-3," it produces a 4mm. scale narrow-gauge track of a most satisfying appearance. What is more, it is very easy to assemble, and, as the bases can now be bought separately, if one wishes to narrow an existing branch the original "OO" flat-bottom rails can be re-used. The standard point will meet most requirements, but specials can be built from rail, sleepering and spikes. The really expert can indulge in the ultimate in track complication, mixed gauge, as the wheel standards of "TT-3" and "OO" are virtually identical, except for back-to-back measurement. Softboard baseboards should of course be used; this material is both cheap and easy to cut.

Naturally there is no difference in track-laying techniques, whether the system is standard or narrow gauge, for you are laying a 12mm. gauge railway in either case. The only point to watch is the track centres on passing loops and sidings (double track is almost unknown on narrow gauge). In most cases the standard 1½in. centres of "TT" will be used, but occasionally it might be advisable to use the 2in. of "OO," particularly if very wide stock is combined with a sharp curve. In these matters, narrow-gauge standards are much more flexible than on standard gauge, largely because each line was a separate entity, and set its own standards—tight as in the case of the Festiniog with its notorious tunnel; lavish as on the Leek and Manifold, where the loading gauge had to clear standard-gauge wagons on transporter wagons.

The narrow-gauge modeller has two choices, either a purely narrow-gauge system or a feeder for an established standard-gauge line. In the latter case, much depends on the space available, though an excellent arrangement where room is very restricted is a simple exchange siding fed by a mineral line from a quarry. We show a suggestion below designed to occupy a corner site—usually the only place on the line where there is space to spare. To avoid complications it is assumed that the wagons are propelled to the sidings through a tunnel—this, of course, serving to hide the train between movements. This could well provide the start of narrow gauge on the system; a later and more elaborate arrangement would perhaps involve replacing a standard-gauge branch with a true narrow-gauge feeder. This would incorporate two termini and much additional stock, thus adding to the interest of the layout without occupying a great deal of space—you would in effect have two separate systems, completely independent except perhaps for some mixed-gauge sidings. But narrow gauge is insidious and it could end by the standard-gauge tracks becoming in their turn reduced to 12mm. gauge! Which brings us to the pure narrow-gauge layout mentioned at the start of the paragraph.

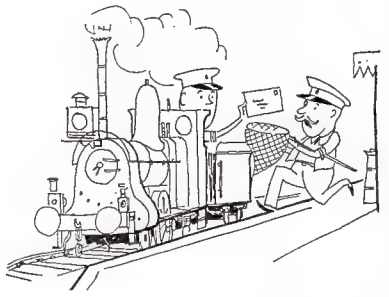
12mm. narrow-gauge systems are yet another shot in our locker, another way of making a model railway an individual thing. Whether as a feeder, a subsidiary system or the entire layout, a narrow-gauge line adds extra interest to the layout.

* "OOn3" is the accepted formula for this combination—"OO" for scale, n denoting narrow gauge, 3 denoting 3ft. gauge prototype.



Plan and perspective sketch of corner site narrow-gauge feeder.

READERS' LETTERS



A free-for-all forum of ideas and opinion

BASEBOARD STRUCTURES

I have yet to see any reference in the model press to the use of "Dexion" slotted angle for baseboard framing. There are several sizes (at least four) of this in steel and aluminium, and I believe that the price of the *heaviest* section (about 3in. x 3in.) is £6 10s. per 100-foot package (in steel). From my own observations, one package would make *sixteen feet* of trestle for a 5in. gauge steam passenger track well able to withstand 1cwt. per foot, thus: 4ft. sections, two legs 30in. each; cross struts for same, say, total 30in. the two; horizontals 4ft. each (two), one diagonal 4ft. 6in. Each section bolts to the legs of the next. An extra pair of legs would be needed for one end, of course.

However, this is merely quoted as an example of the strength of the stuff. I doubt if a "live steam" club could otherwise provide material for 100 feet of track at a cost of £32 10s., with some angle in hand for extra cross pieces! From *our* aspect, of course, one of the smaller sizes is quite adequate—there is, I believe, a section approximately 1in. a side which retails at about £3—£4 a package (100 feet; this is the minimum order, it comes in 10ft. pieces). Anyway, I intend to use the stuff on my own line.

The G.W.R. mahogany doors (toplight third compartment) I am using will not yield enough free timber for my new plan, so I propose to make a basic frame (in plan) faced with this, with battens of the door-wood (sawn longwise to pieces about ½in. x ½in.), using the "rails," etc., of the doors for numerous cross bearers, gradient foundations, etc.

Elimination of jointed woodwork in the structure

This is important: a durable structure in wood must have well-made half-lap and cross-halving joints. Apart from the matter of skill in carpentry—or lack of it—those who live in flats, etc., may not be able to do such work. When we lived in a London flat the first attempt brought the lnadlady up like a rocket, together with a host of protests from other residents!

Minimum risk of warping

One still has to take a long chance with the usual stock timber. Ramin, the most commonly supplied wood, is very unreliable in this respect; moreover, the small sizes are so brittle and very ready to split, even with small panel pins.

Quietness

In a factory stores I noticed that the moving about of stock and pallets, etc., was very much quieter on the "Dexion"-built racks than on the much more massive wooden ones. There seemed to be little resonance in the metal angle compared with the wood posts and rails.

Holes

The angle being full of slots and holes, it would, I think, be a very sad case where one could not find one in the right place! In addition to this the size of the bolting dimension (¼in.) would no doubt allow of some adjustment in the position of track bases, etc., being screwed to the angle—a very useful feature. Against this is the need for washers with ordinary sized screws, which should be R.H. However, the screws need not be more than ¾in. long except in special cases, and if large-diameter plate washers are not to be had, suitable ones can easily be made from scraps of three-ply hardboard.

Cost

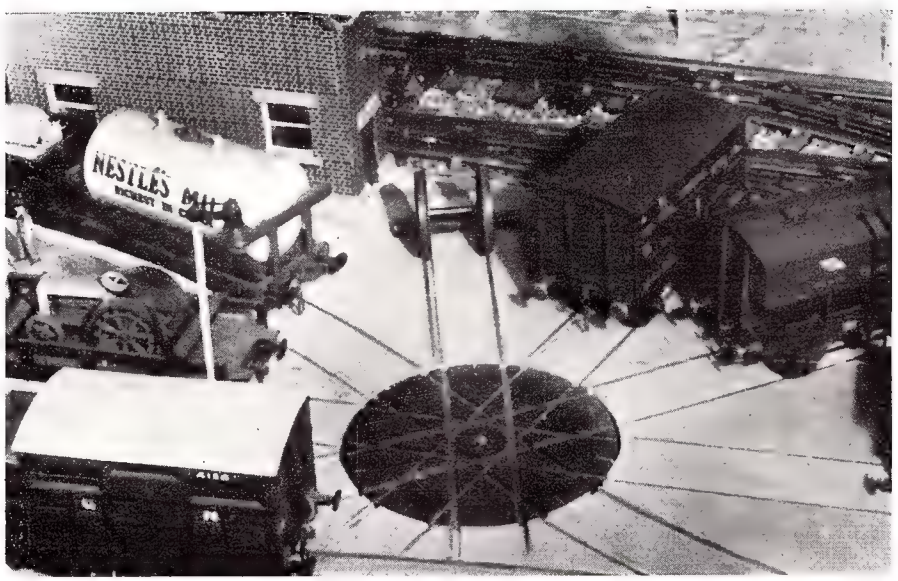
This is the question. I think that the nature of the layout determines how much more this might be. Standard 2in.×1in. prepared or ramin is priced at £2 per 100ft. retail here. Assuming a 3ft. 6in. high working level with a 2ft.-wide base and 4ft. pitch for the supports, such a section requires about 32ft. of timber, costing in other words about £2 for 12ft. of baseboard support (plus another six or seven shillings if the fourth leg is required, i.e. a 12ft.×2ft. layout). The 1¼in.—1½in. "Dexion" seems to cost double the wood, i.e. about £4, but only three legs would be required, the angle being quite able to give rigid support at 6ft. centres for the same length of layout. This reduces overall requirements to the basic package plus 5ft. (one diagonal), which could be an odd piece of wood. So the "Dexion" frame would probably cost about eighty per cent more than wood. By reducing its function to support legs and longitudinals, the rest being wood, the gap is narrowed a bit.

"Dexion" will doubtless interest those who are more concerned about costs of carpentry, speed and efficiency of assembly, or, as in my case, the prospect of a rapidly assembled portable layout wherein the pieces of angle in the legs can be also used to "box up" the layout for transport purposes.

Whither "Dexion"?

R. ORMISTONE-CHANT.

Manchester.



The wagon turntable on C. L. Fry's Irish International Railway Tramway System *(see Readers' Letters, April, page 94).*

A PLEA TO THE TRADE

As a keen railway modeller in my early fifties, who has graduated downward from gauges 2½in., 2in., "1," "O" and now "OO," I am writing this letter (which I have been waiting years for somebody else to write!) before the trade gets too deeply involved in "TT." The fact is (repeated

ad nauseam) that most recruits to the hobby start with a proprietary set, and so far all the manufacturers have produced is a goods set and/or a passenger set. In most cases the passenger variety is powered by (1) a "Duchess," (2) an A4, (3) a "Merchant Navy," or (4) an abominable cut-down version of one of these—all Pacifics.

Apart from the absurdity of this tail-chasing round an oval on the dining-room table, are the manufacturers not harming their own commercial interests from a psychological point of view? How many boys (or girls) who do not live on or near the L.M.(R) main line between Euston and Perth (including Manchester) have ever seen a "Duchess" or "City" in the "flesh"? The same applies to an "A4" except between King's Cross and Aberdeen on the E.R.

In my opinion the young model railwayman will retain his interest to a far greater extent if he is trying to emulate something he has seen himself. Here, then, is the point of my letter. Why not a mixed traffic prototype for the mass-produced proprietary sets? The loco looks equally at home hauling a mineral train, an express goods, a local passenger or a main-line express. The obvious choice is the "black" Stanier 4-6-0, which can be seen anywhere from Thurso to Bristol and from Holyhead to Lincoln. Excluding the B.R. S.M.T. types, there are, I believe, about 800 of these locos. The next choice is the E.R. B.1 class, about 400, and on view from Inverness to London and from Liverpool to Norwich.

For the Western Region the modified "Hall" class plus the original "Halls" produce about 300 locos, and for Southern enthusiasts there are the S.15 and H.15 classes. All these classes have "vital statistics" very adjacent to each other, although valve gears, boiler mountings, etc., are naturally quite different. My suggestions to the manufacturers therefore are:

1. Build a standard chassis complete with motor, cylinders and valve gear.
2. Have plastic "bodies" to supply the needs of the four old groups, L.M.S., L.N.E.R., G.W.R., Southern.
3. Assuming that the greatest bugbear in "TT" is Walschaerts valve gear, let's have the new "Stanier" type B.R. S.M.T. with fixed (non-revolving) Caprotti valve gear.

I assume that Tri-ang are producing their "Castle" for three reasons:

1. It is a 4-6-0, and *not* a Pacific.
2. No Walschaerts or any visible external valve gear.
3. The outside cylinders are sufficiently far back not to interfere with the bogie on small-radius curves.

But *why* a design thirty-five years old in the last decade (unfortunately) of the era of the steam locomotive?

I could go on riding this hobby horse for a long time, but in fairness to you, Mr. Editor, I had better stop!

W. F. BARBER (LT.-COL.).

Newthorpe, Lincs.

"Castles" were still built under B.R. Indeed, this design had the rare distinction of being built while the earliest examples (the rebuilt "Stars") were being scrapped. It is a classic design and is to be found almost everywhere in the Western Region. Indeed, it really meets Mr. Barber's demand for a locomotive that is frequently seen by all.—ED., R.M.

LANAL COUPLINGS

I read with interest the progress "TT-3" has made, and the enterprise shown by Tri-ang in this field. What particularly intrigued me was the coupling to be used on their new stock. My fervent hope is that this type of coupling will displace the type used on their "OO" stock and that some firm will manufacture a similar type that can be fitted to any existing stock of any make.

Until now I have made this type of coupling for my own rolling stock and locos, sometimes in conjunction with Kirdons, but the drawback has been no suitable uncoupler. The Tri-ang "TT" uncoupler strikes me as being ideal when it can be used on fast-running track as well as in sidings. Valuable time is wasted by the amateur making working ramps, etc., when he could be otherwise more usefully engaged. I may add that I have nothing against the Hornby-Dublo couplings except that I do not think they are the ideal type for my railway. I had too much trouble with them

Gateshead. R. V. ASHMAN.

TAXI

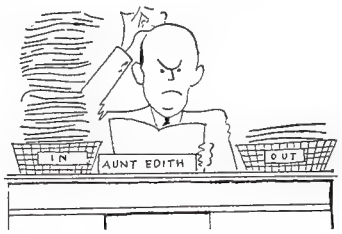
In the March issue of RAILWAY MODELLER, your correspondent, K. Edwards, of Tring, says that Meccano Ltd. used to produce a model of an old taxi in their Dinky Toy range.

It may interest him to know that they still produce one—an Austin of modern design. Unfortunately it is too large for "OO" gauge, but, I think, will be ideal for "O." I believe it costs about 3/-.

Edinburgh. R. HERRIOTT.

ADVICE BUREAU

Queries should be addressed to the Peco Technical Advice Bureau, Pecoway, Station Road, Seaton, and should be accompanied by a s.a.e. and coupon on page xiv. We regret that we cannot prepare special designs for individual readers.



I am a very average enthusiast when it comes to alterations or conversions and this leads me to seek your advice. The small layout I am designing is single line and very much away from the main line, but some time ago I purchased a Tri-ang "Princess Elizabeth," which will look very much out of place on single-line workings. I wish to know if there is any engine body on the market to fit the Tri-ang instead of the present slightly underscale body, and suitable for 2-6-0 locos, to which I would like to convert the present 4-6-2. A 2-6-0 would be much more suitable, but of course the job might be out of the question as far as conversion work or price is concerned. Can you help please? I am running this loco and a Jinty G.W.R. pannier on Wrenn and Formo track.

J.E.T., Paisley.

We very much regret to inform you that there are no alternative bodies on the market to fit the Tri-ang "Princess Elizabeth" chassis. However, if you wish to build a 2-6-0 utilizing a large proportion of this mechanism, we would suggest that you have a shot at doing the job yourself. Apart from the modifications to the front end, which might be possible by simply fitting the Tri-ang pony truck as supplied for the 2-6-2 tank in place of the present bogie, and cutting off the leading end of the frames, you could arrive without too much trouble at a 2-6-2, while with a little more drastic work a 2-6-0 chassis could be constructed.

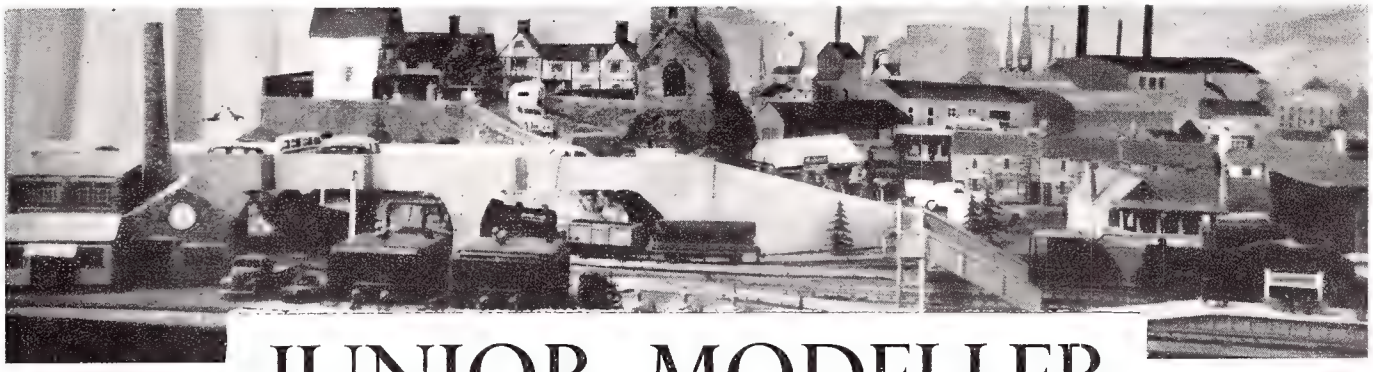
Naturally, the top portion of the locomotive would be virtually useless, and therefore it would be necessary to build an entirely new one, but it would not be unduly difficult to do this in card suitably strengthened with thin stripwood, filled with shellac and painted in the usual fashion, unless you feel confident about attempting the construction of a metal body.

JUNIOR DO IT YOURSELF

(Continued from page 169)

structures are cemented or pinned together, and reinforced in the case of card with gummed tape.

Finishing can be elaborate, but a simple treatment will suffice. The edges are covered in brick paper, while the top surface is painted with black oil paint and sprinkled with washing powder to represent asphalt. Finally a white line is painted along the platform edge, this line ending at the top of the ramp, its purpose being to identify the platform in the dark.



JUNIOR MODELLER

THE WEST HIGHLAND LINE

by Brian Minto (age 14)

THE West Highland Line serves the towns of Westbury, Doune and Crawford. The railway caters mainly for passenger traffic, but there is quite a large goods service.

Westbury is a large industrial town which has sprung up only recently because of the discoveries of slate in the neighbouring districts. Doune is a small village near Westbury, and although it does not have a passenger station it has a small goods yard. Crawford is the junction of the main lines.

The industries of Westbury are slate quarrying, an iron and steel foundry, an armament factory and an oil refinery. The slate is transported by boat from Westbury harbour, to which there is a single line leaving the main track in the tunnel situated before Westbury station. This line, which also serves the locomotive depot, is imaginary. Iron and steel goods and the products of the armament factory go by rail. Oil is transported by rail only to the towns farther north. There is a little fishing done in the loch and the catch goes by rail to Glasgow.

The passenger traffic consists of a local train which is drawn by B.R. standard class 2-6-4 tank 80054 and an express, the "Highlander," which is pulled by E.R. class A4 60016 "Silver King." E.R. class N2 69567 handles the goods traffic. All these engines are shedded at Westbury.

The first train of the day is the local from Crawford, which takes workers to the slate quarries. The rest of the day is occupied with regular journeys by the local and the "Highlander," with pick-up goods service in between. During the summer extra trains are run to bring holiday-makers to the loch-side.

A modern ferro-concrete bridge has been built to carry the main road over the railway. This was built as a result of the appeals made by the inhabitants of Westbury and Doune to their county council.

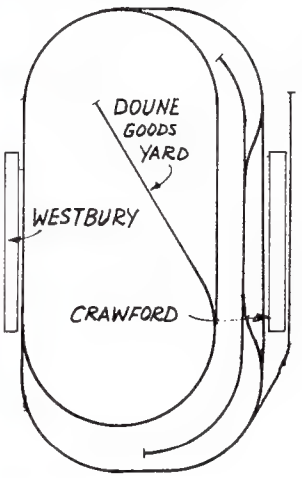
The locomotives, rolling stock controllers and track are all standard Hornby-Dublo equipment. All the points except one are hand-operated.

The layout is populated with Master Models and the buildings are Bilteezi with the exception of the two stations and one signal-box, which are Hornby-Dublo. The miniature vehicles are Dinky toys.

The scenery was very kindly painted for the railway by an art teacher at the local high school. The hill at the tunnel was built up by placing stucco over flax and crumpled newspapers.

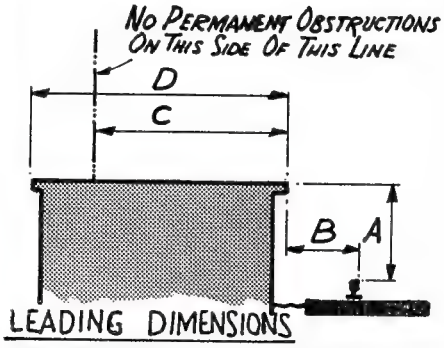
The layout is on a baseboard of the popular size 6ft. x 4ft. and took only about a year to build, although there was a portable railway for two years previous. The present track plan was adapted from the plan of the layout shown in the RAILWAY MODELLER for October 1956.

Heading: front view of layout, showing Westbury on the scenery. Left: aerial view of layout, showing the village of Doune with Crawford station on the right and Westbury station on the left.



JUNIOR DO IT YOURSELF

PLATFORM CONSTRUCTION



LEADING DIMENSIONS

	A	B *	C MIN.	D † SINGLE MIN.	D † SINGLE AVE.	D † ISLAND MIN.	D † ISLAND AVE.
FULL SIZE	3'-0"	2'-9"	6'-0"	7'-0"	12'-0"	13'-0"	16'-0"
0	21	19	42	49	84	91	112
00	12	11	24	28	48	52	64
TT-3	9	9	18	21	36	40	50

DIMENSIONS IN M.M. UNLESS OTHERWISE STATED.

* KEEP AS CLOSE AS POSSIBLE

† THESE FIGURES REPRESENT TYPICAL PLATFORMS AND LOCAL VARIATIONS DO EXIST. THE WIDTHS CAN BE APPRECIABLY REDUCED AT ENDS OF LONG PLATFORMS

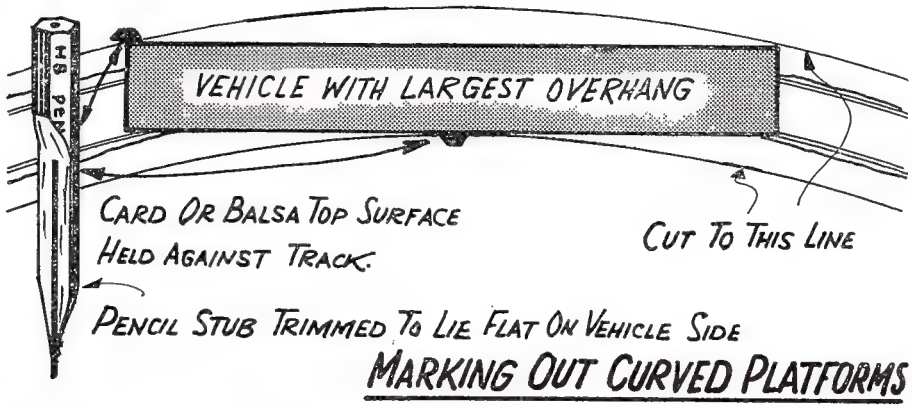
NO matter what else we may omit from our railways, platforms undoubtedly are a must. Their construction is really quite simple, the most important matters being not so much their actual modelling, but rather their dimensions. In this respect many otherwise excellent models go sadly astray, and the accompanying diagram and table will help to correct this.

First of all, the question of height. The platform surface must be three scale feet above *rail level,* the exact height above the baseboard surface depending, of course, on the height of the track employed. Actually this figure is not absolutely constant on the prototype, particularly on the smaller country stations, but for general modelling purposes it is better to adhere to a fixed figure until experience shows just how much licence can be allowed. The distance from the rail face given in the diagram is calculated for straight track. Where curves exist the platform top should be marked out using a specially sharpened pencil held against the vehicle with the largest overhang. The platform edge should be kept as close as possible to the vehicles, in accordance with prototype practice, but if the constructional methods described here are followed a little judicious trimming can always take care of any difficulties.

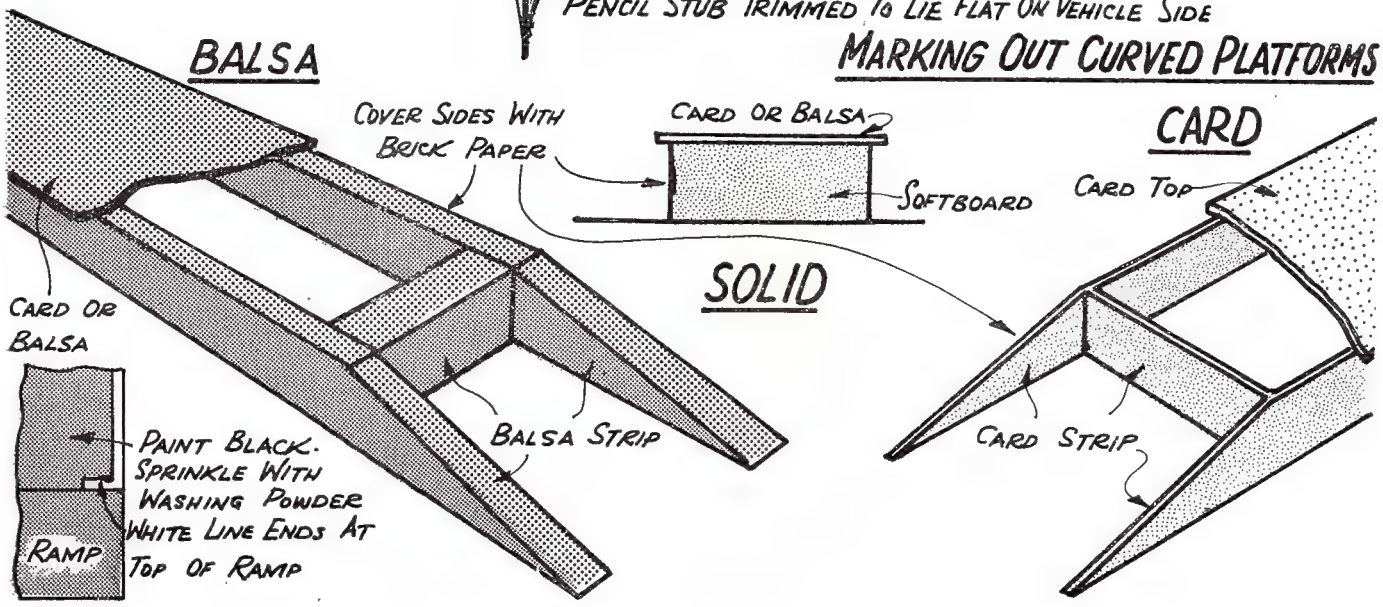
The width of platform faces is most important. A Ministry of Transport regulation states that no permanent obstruction can be placed nearer than six feet from the edge, and therefore platforms must be wider than this. Figures are given for minimum and average platform faces, but this assumes that no large structures such as waiting rooms, buffets, etc., are to be found on them. In such cases the platforms could well be double the average width. The only exception to these rules comes at the end of long island platforms. Here a width of four feet is permissible where tracks converge.

There are two basic methods of construction. The solid method is perhaps the simplest, where a card top surface rests on a softboard or softwood sub-base, but this is not always practicable due to the lack of material of the exact thickness required. The built-up method, which utilizes the same card or thin balsa top surface, has the underneath structure made from strips of balsa or card, cross braced at approximately 3in. intervals. These

(Continued on page 167)


VEHICLE WITH LARGEST OVERHANG
CARD OR BALSA TOP SURFACE HELD AGAINST TRACK.
CUT TO THIS LINE
PENCIL STUB TRIMMED TO LIE FLAT ON VEHICLE SIDE

MARKING OUT CURVED PLATFORMS

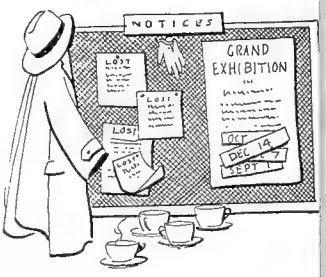


Personality Parade No. 67

The Rev. Peter Bond Denny

PETER Bond Denny has played with trains from his earliest days and still does. In 1946 he first became interested in 4mm. scale, and when everyone told him that 18mm. two-rail would not work he set out to prove that it would. The result was the Buckingham Branch Line. A station from this line exhibited at the Model Engineer exhibition in 1947 won him his first bronze medal. When the layout was exhibited at the Model Railway Club exhibition in 1948 it was probably one of the first 18mm. two-rail layouts to be demonstrated publicly. But the first Buckingham Branch Line did not survive long; marriage compelled it to contract into a smaller, completely portable system which was shown at the M.R.C. exhibition in 1950 and 1951. Not satisfied with one railway, he started in 1953 building the Tamar Valley Light Railway, a 10mm. 3ft. narrow-gauge line running in the garden, which a move to Cornwall had made possible. He is now the vicar of a country parish and lives in a large Georgian vicarage. The problem is no longer one of finding room for the railway, but of making the railway big enough for the room. Like most of his railway activities, which are carefully planned, he now has a succession of operators, three sons, all dead keen on trains; in fact they too have their own railway room!

CLUB NOTICE BOARD



NOTES AND NEWS

The Ramsgate and District Model Club

It has been decided that during the months of July and August meetings will be held on Friday evenings only from 7.30 to 9.30. Visitors to the town will always be certain of a cordial welcome. The club's address is Effingham Street, Ramsgate (at the rear of the fire station). Hon. secretary, Mr. E. Church, 14 St. Mildred's Avenue, Ramsgate.

Association of Model Railway Clubs

The Association of Model Railway Clubs was formed some time ago to bring together for mutual benefit model railway clubs in Britain, its formation springing from a close association between several London area societies. Initial progress has been solid rather than spectacular, but already clubs from all over England are members of the association.

The association's newsletter has now been transformed into a duplicated magazine under the editorship of P. C. Thurlow with the title "The Model Railway Express." Each member club will receive one copy free of charge, non-members and individual clubmen can obtain further copies for 3d. each or 2/- per dozen. Editor, Mr. P. C. Thurlow, Walden, 7 Larch Avenue, Bramley, near Rotherham, Yorks.

Merseyside Model Railway Society

Although the Merseyside society's regular meetings have come to an end with the onset of summer, all is not quiet in the area, for steps are being taken to acquire a new club-room, where it is hoped that visitors can be better entertained than was hitherto possible. The hon. secretary is Mr. A. L. Eagles, 38 Silverdale Road, Bebington, Wirral, Cheshire.

Bournemouth Model Railway Society

The exhibition to be held at Bournemouth West station is now to be held from Wednesday, August 21, 1957, to Wednesday, September 4, these dates being altered at the request of the stationmaster. All inquiries concerning the society should be addressed to the hon. secretary, Mr. D. G. Yule, 23 Elmsway, Southbourne, Bournemouth, Hants.

The Bristol 7-4-2 Club

The above society wishes to announce that meetings are held every Friday at the Club-rooms at 1 Richmond Park Road, Bristol, 8, commencing at 7.30 p.m.

Northolt Model Railway Club

At the recent Model Railway Club exhibition the club had Mr. Johnson's portable stud-contact layout, which is thought to have gained quite a few stud-contact converts.

Track re-laying is now taking place on the terminus of the large stud-contact layout and the two-rail layout has progressed as far as beginning the high level station. Inquiries to Mr. J. F. Matthews, 180 Chaplin Road, Wembley, Middlesex.

Tramway and Light Railway Society

On the society's visit to the Modern Electric Tramways Ltd., Eastbourne, a special car will be hired and the outward journey made by electric. The return arrival at Charing Cross will be approximately 10 p.m. Meet 9 a.m. outside No. 9 platform barrier Victoria station. There will be reserved compartments and tea arrangements, but a sandwich lunch is advised.

Epsom and Ewell Model Railway Club

This club meets on the second Thursday in each month at Pit House, Ewell, Surrey, and is always ready to welcome visitors. It caters mainly for "OO," "O" and "S" gauges. The annual subscription is 10/- and the hon. secretary is Mr. L. C. Krailing, 74 Weston Park, Weston Green, Thames Ditton, Surrey.

"EM" Gauge Society

The above society has issued to its members Technical Note No. 3, "The Six-wheeled Coach." This deals with the problems of clearances, axle sideplay, and other matters relating to running such vehicles on curves, and gives several diagrams explaining different systems for six-wheel chassis.

All inquiries should be addressed to the secretary, Mr. J. L. K. Mann, 3 East Drive, Watford, Herts.

Wakefield Society of Model and Experimental Engineers (Small Gauge Section)

The above society has a small "OO" gauge section which is struggling hard to complete a portable layout in time for its exhibition in October. Its main requirement at present is for **active** members who are prepared to work to make this layout possible. Working nights are held every Wednesday at 7.30 at the house of Mr. E. Gresty, 174 Aberford Road, Stanley, near Wakefield.

JULY MEETINGS

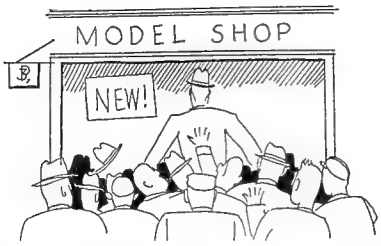
Birmingham Model Railway Club
3—Lecture by members of Birmingham Model Engineers.
11—Track night.
17—Evening rail trip—destination to be announced.

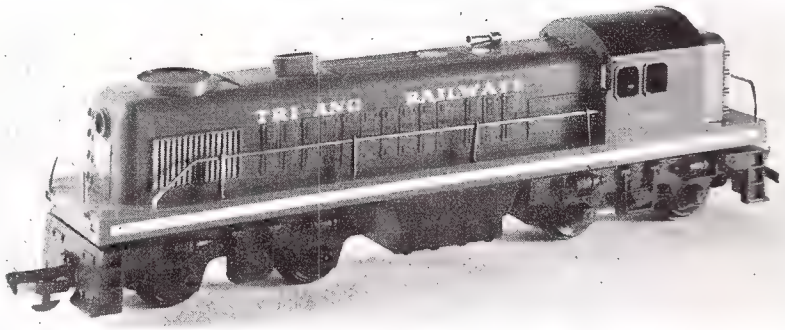
Hoddesdon and District Model Railway Society
3—Layout construction.
10—Railway marshalling. Mr. Lowe.
17—Running night.
24—Visit to Bob Smither's layout.
31—Layout construction.

Model Railway Club
4—Track night—L.M.S. (at Hammersmith).
18—Lecture, "Modelling the North Eastern." Mr. T. Horn (at Caxton Hall).
25—Track night—other groups (at Hammersmith).

Tramway and Light Railway Society
21—Visit to Modern Electric Tramways Ltd., Eastbourne.

TRADE WINDOW





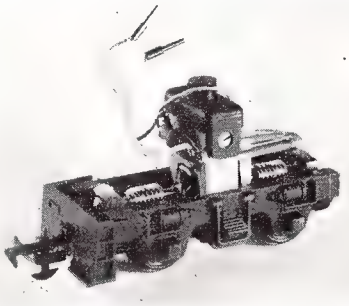
TRI-ANG "OO" GAUGE TRANSCONTINENTAL DIESEL SWITCHER

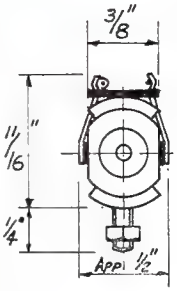
ROVEX SCALE MODELS

Margate, Kent.

Externally the new Tri-ang diesel switcher is a replica of a popular type of locomotive in regular use on all dieselized railways, the BoBo light unit, which is generally known as a switcher for no better reason than that the earliest types were originally intended for this purpose in the U.S.A. until it was found that their capacities extended to any type of light and medium main-line duties. Many are in use throughout the Commonwealth, while a series of substantially similar locomotives is planned for use on British Railways in the near future.

The new unit is of greater interest than its exterior reveals, for it is the first model to use from the outset the new, redesigned Tri-ang motor bogie. This interesting unit, which is also being fitted to the A unit diesel electric loco in the Transcontinental range, is illustrated in our second picture. The new type of motor used has the armature between the wheels, and worms on the armature shaft engage with worm-wheels on the bogie axles. The bogie has inside bearings, with keeper plate assembly (indeed the entire unit can be dismantled with no other tool than a screwdriver), while dummy outside frames are provided to match the plastic-framed trailing bogie. The new unit is a great advance on the earlier pattern, the performance being considerably enhanced while the elimination of a spur train has reduced the gear noise to an absolute minimum. In fact the unit we tested possessed a pleasing prototypical hum at full speed, not at all out of keeping with the model. This bogie will, with redesigned sideframes, also be used in the S.R. electric set shortly to come into production.





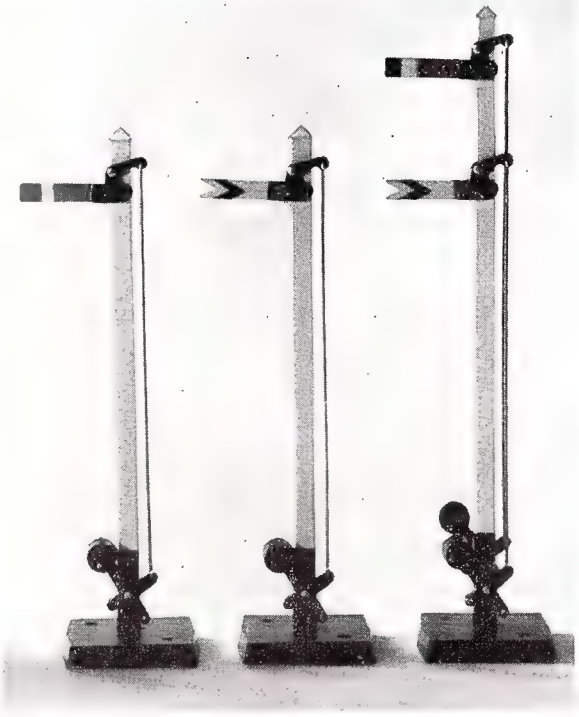
"TT" GAUGE SIGNALS

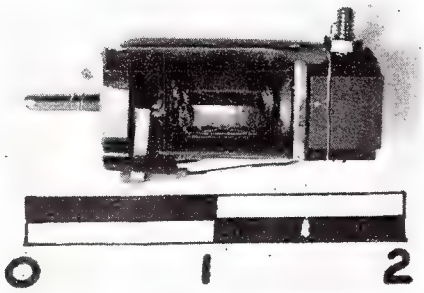
S. & B. PRODUCTIONS

3 Ortland Buildings, Portland Road, London, S.E.25.

Single arm, 3/-.
Double arm, 3/9.

Our illustration, which is virtually full size, shows the latest S. & B. Productions models for "TT" gauge, an attractive range of all-metal die-cast upper-quadrant signals. Each signal is fitted with a balance-weight/operating lever which can be coupled, if desired, to any mechanical or electrical form of remote control. At their extremely modest price they represent wonderful value, providing as they do the basic elements of a signalling system for this newest of gauges.



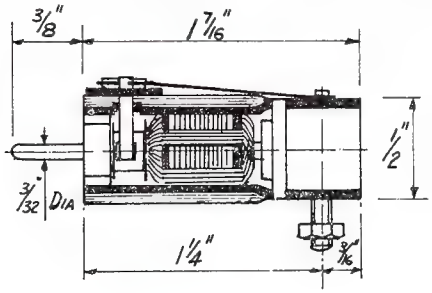


ROMFORD "TERRIER" MOTOR WALKERS & HOLTZAPFFEL

23 Paddington Street, London, W.1.

22/6 (less gears).

The latest item in the Romford range of motors appears at first sight to be of greatest interest to "TT" gauge workers, but on closer examination it is revealed as being a vastly more versatile power unit than this, for its small size renders it ideally suited as the source of motive power for all small locomotives. Indeed, as its name suggests, it solves the problems

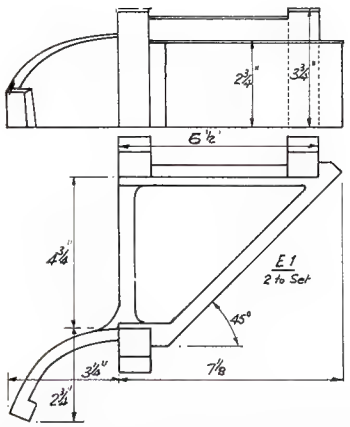


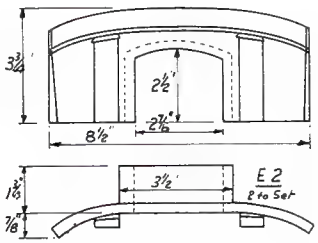
that have always been associated with the popular L.B.S.C.R. 0-6-0 in 4mm. scale. Our photograph, which is virtually full size, gives a general picture, but in order that intending purchasers may see how the motor would fit into their proposed locomotives we append a full-size set of elevations. It would appear first that this motor will fit comfortably into the majority of 3mm. scale locomotives without difficulty, and into a 4mm. scale model of almost every locomotive built since the Rocket!

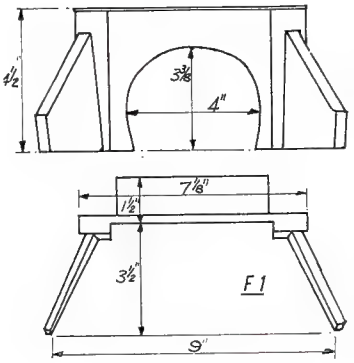
Despite its small size, the motor is fitted with a seven-pole $\frac{3}{8}$in. diameter armature, while the brush-gear is commendably robust, the brushes being readily removable for replacement when the copper carbon wears down. It is a reliable unit, and tests carried out on a model fitted with one of these motors showed that the "Terrier" is a worthy addition to the Romford range.

We understand that, coincident with the introduction of the "Terrier," production has ceased on the early Mark II Romford motor, which had been retained in view of its popularity with modellers of old-time prototypes, for this unit was unduly susceptible to rebuilding to fit it into impossible locations. The "Terrier," as indicated above, meets this requirement much more readily.

☆ ☆ ☆







A.C.E.M. CAST MASONRY FITTINGS DISTRIBUTED BY EDWARD EXLEY LTD.

The Ridge, Eaton Hill, Baslow, Derbyshire.

We have received for close inspection samples of the latest productions in the new A.C.E.M. range of cast masonry components, which fully live up to the high standards of their predecessors. These models are something special in the way of cast fittings, for each is an individual model. At first sight the various items appear to be just very neat examples of casting, but the eye is soon caught by small irregularities. These are not faults in the model; they are scale replicas of the characteristic flaking that masonry exhibits after long exposure to sun, wind, rain and frost. Each individual stone has been separately modelled, and thus the finished model has the prime essential for any scenic accessory—character. Models of this calibre can only be described as of the highest artistic order and set the standard for the rest of the model scene.

Apart from the attention given to the initial production, considerable care has been taken in packaging. Each item, or pair of items, is individually packed in a stout box, well secured against damage with shaped sections of corrugated card. This ensures that the models, which are reinforced and cast in high quality hard-finish plaster, arrive in perfect condition.

We append a set of line drawings of the items submitted, giving leading dimensions, for these structures are suited for "OO" and "TT-3," provided a suitable site is available. Incidentally, the small arch bridge, although officially for road or canal, will comfortably take a single-track "OO" line. Indeed, if placed just in front of the gap in the background it provides a fine conclusion to the visible portion of a single-track branch-line model, a pleasing alternative to the usual tunnel mouth.

☆ ☆ ☆

"TT" GAUGE COMPONENTS WALKERS & HOLTZAPFFEL

23 Paddington Street, London, W.1.

Romford driving wheels, insulated, 3/11 each.
" " " non-insulated, 1/5 each.
" " axles and nuts, 1/5 each.
Smokebox doors, 5d. each.
Tank manholes, 4d. each.
Tender axleguards, 5d. each.
Water filler domes, 6d. each.

The first selection of component parts for "TT" gauge comes from Walkers and Holtzapffel, and comprises the first part of the group of fittings most readers have asked for—locomotive parts. There is no doubt that the keen enthusiast does enjoy building his own locomotives, but no matter what his skill he finds it pleasing to be able to purchase those commonplace fittings which are either beyond his workshop capacity, as in the case of wheels, or, as in the case of small fittings, would take a disproportionately high production time to turn out several identical items.

PROPRIETARY CONVERSIONS MERCURY MODEL ENGINEERING CO.

236 High Street, Potters Bar, Middlesex.

We have inspected two further conversions to popular proprietary models carried out by Mercury Model Engineering Co., a Hornby-Dublo 2-6-4 tank fitted with scale wheels with flanges on all drivers for two-rail operation and a Tri-ang "TT" 0-6-0 tank fitted with scale spoked drivers.

The improvement in appearance of the "TT" locomotive has to be seen to be fully appreciated, the model being lifted right away into the scale class. As with all Mercury conversions, the wheels are skimmed in the lathe to ensure concentricity; thus the performance is enhanced, as the factor of adhesion is increased due to the fact that all wheels do their full task.

Despite the central flanges, the Hornby locomotive still takes reasonably sharp curves such as would be found on a scale layout, while the pick-ups have been unobtrusively located in the side tanks away from risk of damage—a most valuable point.

Both locomotives proved highly satisfactory on test.

CORRECTION

We wish to apologize for an unfortunate error which occurred in the address of Messrs. T. and R. Wrenn's advertisement last month. Essex was incorrectly shown as Esssex.

THE LOBBY *(continued)*

to keep one's command of the French language supple or be of inestimable value for students who may find translating an article on tracklaying, or on one of the fascinating branch lines that are regularly featured in the magazine, a more agreeable exercise than that officially set. Would that we had heard of it when we were yet at school!

A.C.E.M.-EXLEY

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See review on page 172

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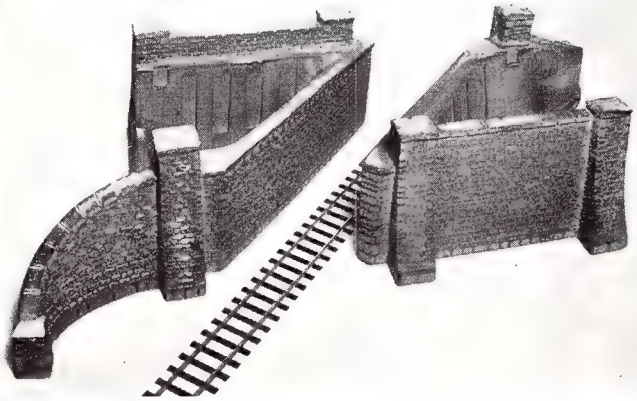

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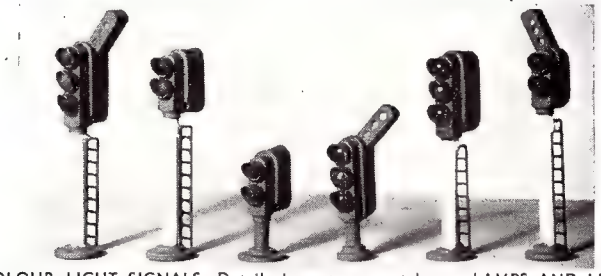

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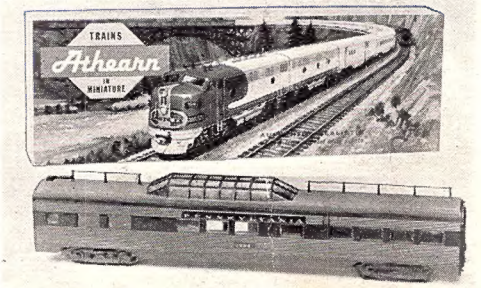

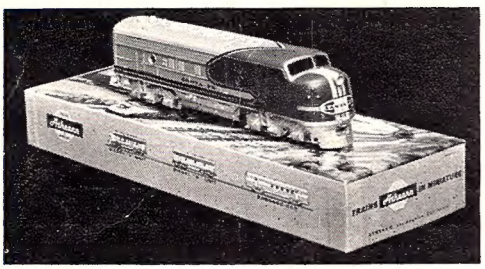

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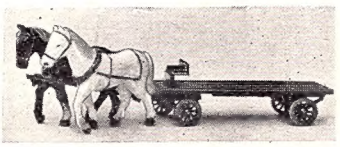

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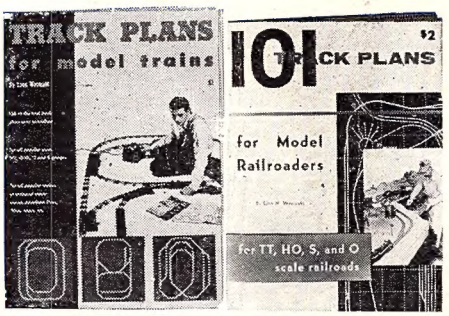

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